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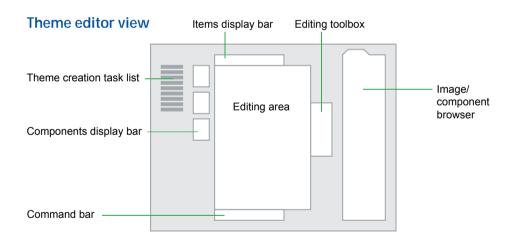
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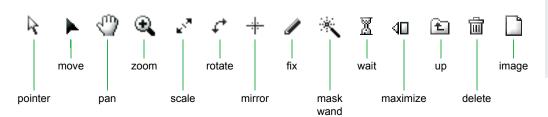
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Quick guide

Theme gallery view







Shortcuts:

F1 Context sensitive help

Ctrl+n Create a new theme

Ctrl+sSave a component and themeCtrl+Shift+sSave as a copy with a new nameCtrl+cCopy the image to the clipboardCtrl+vPaste the image from the clipboard to

the Editing area

Ctrl+z Undo

Shift+LeftMouseKey Select all items between the first and last item

Ctrl+LeftMouseKey Add highlighted item to the selection

Ctrl+Spacebar+LeftMouseKeyZoom inCtrl+Alt+Spacebar+LeftMouseKeyZoom outCtrl+ '+' (plus)Zoom inCtrl+ '-' (minus)Zoom outCtrl+0Fit the view

 Ctrl+1
 100% magnification

 Ctrl+2
 200% magnification

 Ctrl+3
 300% magnification

 Ctrl+4
 400% magnification

 Ctrl+5
 500% magnification

 Ctrl+6
 600% magnification

Spacebar Pan

Shift+scaling Scale the image with fixed aspect ratio

Alt+scaling Scale the image according to the image center Alt+Shift+scaling Scale the image according to the image center

and with fixed aspect ratio

ArrowLeft Move the image one pixel to the left
ArrowRight Move the image one pixel to the right
ArrowDown Move the image one pixel down
ArrowUp Move the image one pixel up

Ctrl+ArrowLeft Activate the section to the left (of the active section)

Ctrl+ArrowRight Activate the section to the right

Ctrl+ArrowDown Activate the section below the active section
Ctrl+ArrowUp Activate the section above the active section

Alt+LeftMouseKey Open animation frame duration pop-up window

Introduction Themes

Theme Studio

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06 THIS AND THAT

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09 SOUNDS

10 CHECKOUT

Other dialogs

This document defines the guidelines for theme creation for Series 60 platform mobile devices. The document is also a user manual for Series 60 Theme Studio version 1.2.

The document is divided into three main chapters:

- The Introduction chapter provides an overview of the theme concept.
- The Theme Studio chapter outlines the installation, functions and views of Theme Studio.
- The Theme creation task list chapter defines theme component creation with Theme Studio as well as gives information about the other dialogs of the tool.

The side bar contains the titles and subtitles of the document. The task list titles in the third section are numbered as in the tool. The highlight indicates the current topic.

Sections may contain notes, which are tips to help you. These items have an exclamation mark graphic and a grey background.

Sections may also contain links and references to other sections. These items have a double arrow graphic and a grey background.

Note:

Notes contain tips to help you create themes.

See also:

Links to other sections are shown here.

What's new in the version 1.2:

Save As function (page 3)

8-bit masks (page 26)

Animated note icons (page 31)

New icons groups (page 46)

Single bitmap highlight (page 47)

Input highlight (page 49)

Wait/progress bars (page 62)

Sounds (page 85)

DRM protection (page 89)

Third party icons (page 91)

Themes

Introduction

Themes

Theme Studio

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Other dialogs

Themes (skins) are used to change the look of your mobile phone user interface (UI).

Traditionally, themes are used to alter frames, colour or font size in the PC environment. On a more limited scale, you can also use themes to modify the entire look of the graphical user interface.

In Series 60 the themes enable changes to the basic UI look. Themes allow you to:

- change the display background
- change the look of highlights
- change the look of pop-up windows
- modify the look of commonly used components

Additionally, themes may contain items specific to individual applications, such as the background image for the Idle mode.

A single theme package can contain graphics for one or many changeable components. If a theme package does not contain a component, the default UI graphics are shown.

Changing a theme only affects the look and feel of the UI. The functions or features of the device are not changed.







Themed UI look

Component:

Display items that are used to build a graphical user interface.

Theme Studio
Installation
Gallery

Gallery Editor

01 BACKGROUND

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O3 ICONS

04 HIGHLIGHTS

05 POP-UP WINDOWS

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Other dialogs

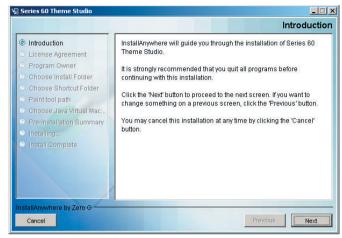
Theme Studio

Installation

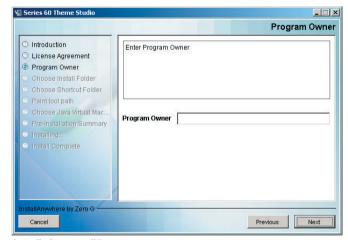
To install the application:

- 1. Quit other programs.
- 2. Double-click the Series 60 Theme Studio.exe icon.
- Read the instructions on the introduction screen.
- 4. Read the End User Licensing Agreement text and accept the terms.

 If you do not agree with the terms, select the 'I do NOT accept the terms of the License Agreement' option. In this case, the program installation will be cancelled.
- Enter a Program Owner name. This name is the default value used as the author for themes.
- 6. Specify the installation directory where you want to install the application:
 - To change the default directory, type the absolute path in the edit area or click the **Choose...** button and select the desired directory.
 - To return to the default values, click the **Restore Default Folder** button.



Installation step #3



Installation step #5



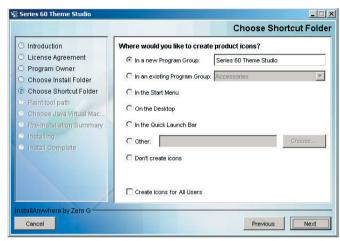
System requirements:

Windows 2000 or XP, 256MB RAM, recommended screen resolution 1280x1024

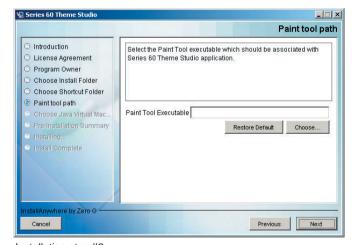
Theme Studio
Installation
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Editor

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- 7. On the next screen, select where you would like to add the program shortcut icon. You can choose one of the following options:
 - In a new Program Group Select this option to create a shortcut in the Program option in the Start menu. Specify the program group name by typing the required name in the edit box next to the option.
 - In the existing Program Group Select this option to create a shortcut in an existing list (program group) in the Program option in the Start menu. Select your preferred group by choosing an option from the list next to the option.
 - In the Start Menu
 Select this option to create a shortcut in the Start menu.
 - On the Desktop Select this option to create a shortcut on the Windows desktop.
 - In the Quick Launch Bar Select this option to create a shortcut in the Quick Launch Bar.
 - Other Select this option to choose where the shortcut will be created.
 - Don't create icons
 Select this option to not create any shortcuts.
 - Create Icons for All Users
 Select this option to create a shortcut that is accessible to all users of the Program Group or Start menu of the Windows OS.
- 8. Set your preferred paint application by typing the absolute path of the paint program, or by clicking the **Choose** button and selecting the paint program.
- Set your preferred sound editing application by typing the absolute path of the sound program, or by clicking the **Choose** button and selecting the sound program.



Installation step #7



Installation step #8

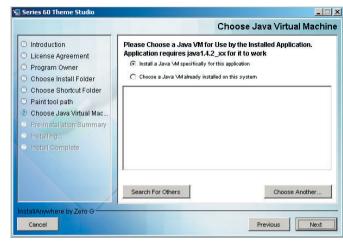
Theme Studio
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- 10. Select the Java Virtual Machine (VM) that will be used. You can select one of two options:
 - Install a Java VM specifically for this application
 This option installs a Java VM specifically for the application. This is the recommended option for all users.
 - Choose a Java VM already installed on this system Select this option to associate an existing Java VM with the application. This option is only recommended for experts who are familiar with Java VM concepts. An incorrect Java VM version may cause errors. After selecting this option, choose one of the listed Java VMs or search for others by clicking the Search For Others button. Alternatively, select a Java VM by clicking the Choose Another... button.
- 11. A summary of the options you have selected is now displayed. If any corrections are necessary, go back to the previous steps by clicking the **Previous** button.
- 12. Click the **Install** button to start installing the application. The dialog shows the status of the installation process.
- Click the **Done** button to complete the installation process.
 It is recommended that you restart your system before starting the application.

Congratulations!

Theme Studio is now ready to help you create themes.



Installation step #10



Installing...



Uninstalling:

You can remove the application by selecting Uninstall Series 60 Theme Studio.exe file.

Theme gallery

The program has two views:

- Theme gallery view
- Theme editor view

The Theme gallery view allows you to check existing themes. Use the view to preview theme design files or SIS files.

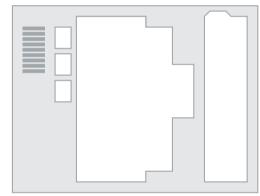
Theme design files contain all components necessary to create a theme. Open a file for editing and select the components to be used for the SIS file output. The file format for design files is TDF (Theme Design File).

SIS files are compressed theme components that are ready to be used in a mobile device. The file format of the packages is a Symbian OS SIS file. The contents of packages may only be viewed, not edited.

Theme design files can be opened with other Theme Studio applications by sharing theme packages. Choose the Export command in the Theme menu to create a package. Use the Import command in the same menu to open the package. The file format for package files is TPF (Theme Package File).



Theme gallery view



Theme editor view

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File extensions:

TDF theme design file packed theme de

TPF packed theme design file
SIS compressed themes for sending to mobile devices

Note:

If the SIS file is protected, you may not be able to view it in the Theme gallery.



Theme design file (TDF)



Packed theme design file (TPF)



Mobile device theme (SIS)

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Theme Studio

Gallery Editor

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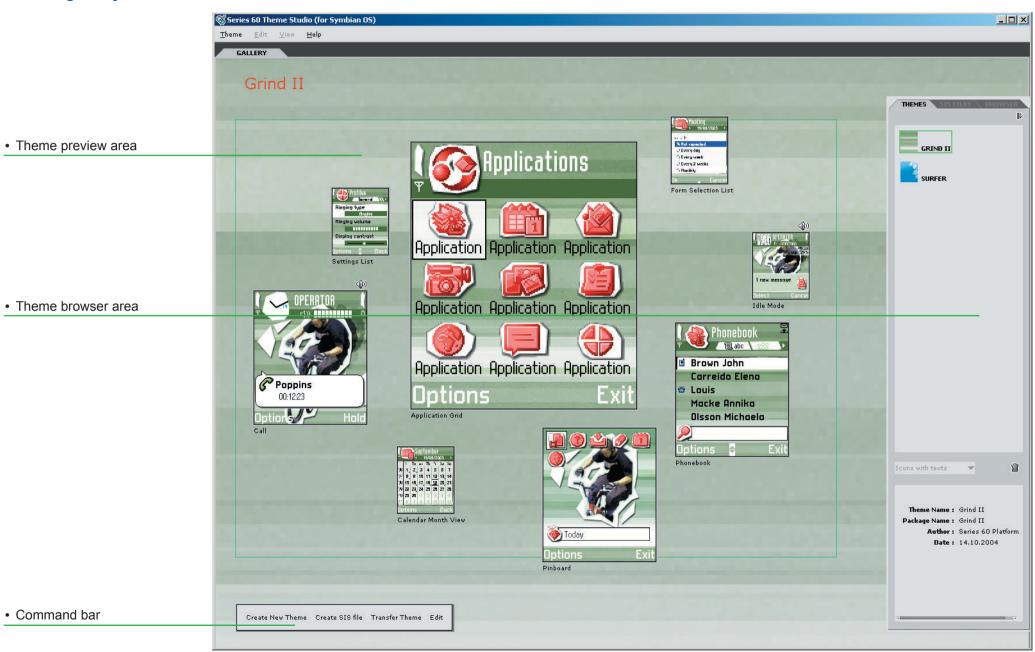
Other dialogs

02 AREAS

03 ICONS

Installation

Theme gallery view



Theme Studio Installation Gallery Editor

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Other dialogs

Preview area

The Preview area contains the title and sample images for the currently selected theme. The displayed item can be a SIS file or a theme design file.

Preview images are shown in an area surrounded by a green line, with the theme's title shown above.

To preview a theme double-click on the design file or SIS file on the Browser tab views or select Open command from the Theme pull down menu.

You can also drag-and-drop a theme design file from the Browser view to the Editing area.

Preview images are shown using different magnification levels.

One image is shown using 200% magnification, three images using actual pixel size, and the rest using 50% magnification.

To bring an image to the foreground, click it with the left mouse button.

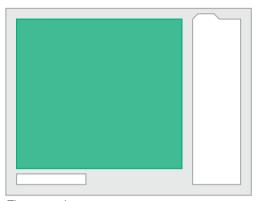
To enlarge an image to its maximum level of 200%, double-click it.

The Preview area always contains the same number of images, which may be of different magnification levels. When you enlarge an image, the remaining ones are reduced.

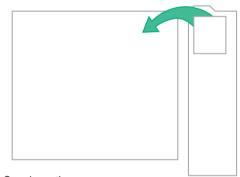
To move images within the preview area, drag and drop them. To drag and drop an image, select the image, hold the left mouse button down, and move the pointer to a new location.

The title of each preview image is shown below its left bottom corner. This title is either the theme component or application screen name.

Preview images that have a sound attached are shown with a loudspeker icon on the top-right corner. Double-click the image to play the sound.



Theme preview area



Opening a theme



Preview image with a sound

Theme Studio Installation Gallery Editor

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Other dialogs

Browser area

The browser area is used to select themes for viewing. The area contains three tabbed views to:

- select theme design files
- select SIS files
- browse for SIS or design files from the computer or network directory

The common items for the browser tab views are:

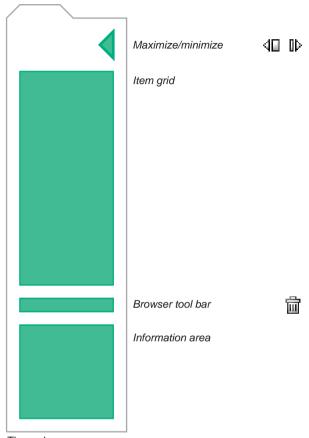
- rubbish bin icon
- information area

To delete an item, either select the item and click the rubbish bin icon, or drag and drop the item from the grid to the rubbish bin icon.

To open a pop-up window that contains deleted items, click the rubbish bin icon. You can restore the deleted items or empty the bin contents (page 90).

The details of a highlighted item are shown in the information area. This area contains the following information:

- theme name
- file name
- theme author
- date
- other data depending on the item (for example, graphic format)



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Theme design files

Theme design files are shown in the first tab view.

You can open the files either by a double-click or by dragging-and-dropping the files to the Editing area.

SIS files

Theme SIS files are listed in the second tab view.

You can open the SIS files by double-clicking the file icon.

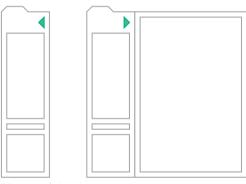
When opening a SIS file you are prompted to select the mobile device model. SIS file contents are shown using the display items of the selected device.

Directory browser

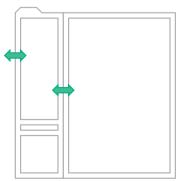
Use the browser tab view to search for theme SIS files or design files from your computer or a network directory.

You can expand this view. Click the **Maximize/minimize** button at the top right corner of the tab view.

The left side of the directory browser contains the directory structure. The file grid is shown on the right. You can select the view type from the browser tool bar to view icons as small, large or with name.



Maximize/minimize



Resizing browser view



To adjust browser views, drag the window borders and division bar.

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Other dialogs

Command bar

The command bar contains commands to:

- create a new theme
- create a SIS file
- send a theme to a mobile device or storage disk
- edit a theme

Creating a new theme

To create a new theme, select the Create New Theme command or the New command from the Theme pull down menu.

You are prompted to enter the theme name and author information, and to select the initial set of components to be created (page 35).

Creating a SIS file

To create a SIS file, select the Create SIS file command. This command is only available for the theme design files.



Command bar



create a new theme save a component and theme copy and save a theme with a new name

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Sending a theme to a mobile device

To send a theme to a mobile device or directory location, select the Transfer Theme command.

To send the theme to a mobile device, activate the infrared option and align the infrared port of the device with that of your computer.

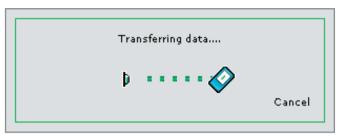
When the transfer is complete, a notification is shown in the mobile device. You can activate the theme by opening the message and following the installation instructions in the device.

You can also save the SIS file to the computer file directory and transfer the file to the mobile device by other means. This can be done, for example, via a Bluetooth connection or USB connection.

If you choose to send a theme design file, a SIS file is created first, and then the sending action is started.

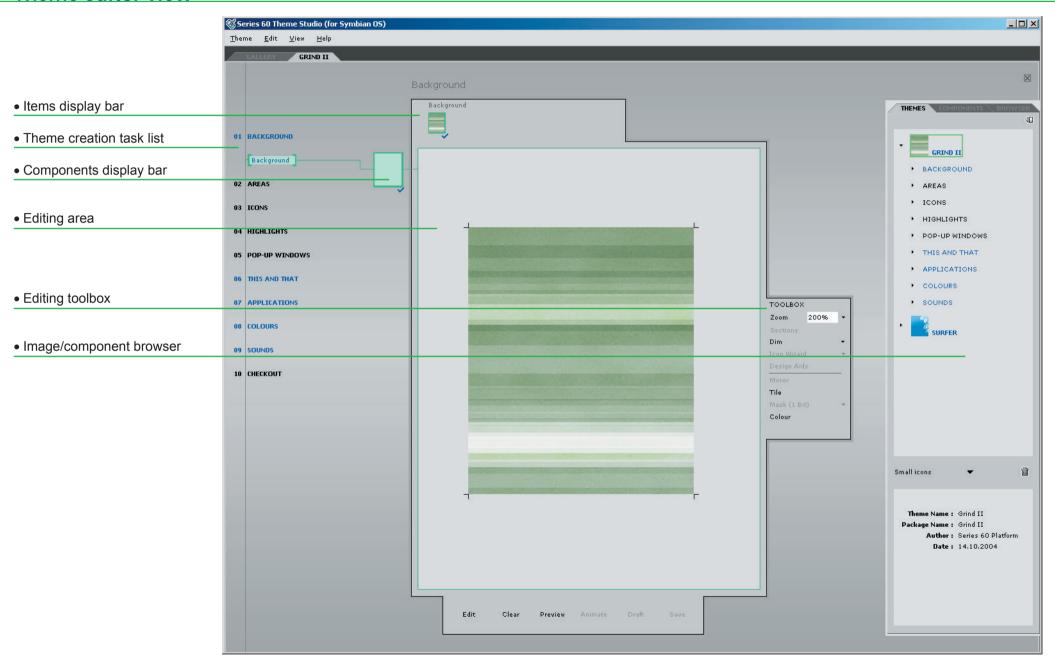
Editing a theme

To edit the theme design file shown, select the Edit command from the command bar or from the Theme pull down menu. The theme editor view appears. You may make changes to the theme components and save or discard the results.



Sending a theme

Theme editor view



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Task list

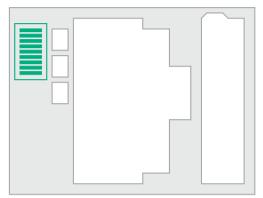
When a theme is created a list of available components is shown on the left side of the screen. This list acts as a task list indicating items that are:

- done
- to be done
- not to be done

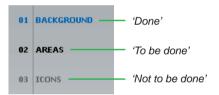
You can define the initial selection of items to be included in the theme package in the theme creation dialog (page 35). The selected items are shown in black, and the items that are not selected are shown in grey.

Components that have been created and saved are shown in blue. The section title is also shown in blue when all the selected items have been saved.

You can create components regardless of the initial selection – the list is used to guide the creation only. You can create items in any order, remove items, and define the final selection of theme components when the SIS file is created. When you define the SIS file output, you can include all, or a subset of, the components of the theme design file.

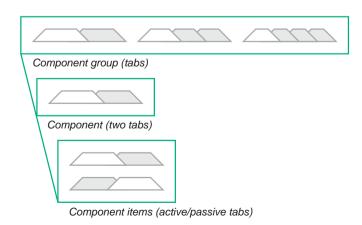


Theme creation task list





theme components of the same nature single theme component single item within a theme component



Theme Studio Installation Gallery Editor

Theme creation in nutshell

At the Theme Tool click a section title to open a submenu. Submenus contain theme component groups.

01 BACKGROUND — Create basic theme background graphics and general full screen background images.

02 AREAS — Add images that change the outlook of specific areas.

03 ICONS — Create Application menu and submenu icons.

04 HIGHLIGHTS — Adjust list, grid, and input highlights.

05 POP-UP WINDOWS — Define graphics for pop-up windows.

06 THIS AND THAT — Adjust miscellaneous items.

O7 APPLICATIONS Add application-specific theme items.

08 COLOURS — Modify icons, text and line colours.

09 SOUNDS — Add sounds.

10 CHECKOUT Verify output and create a SIS file.

Other dialogs

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Components display bar

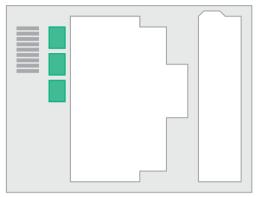
A component group may contain one or several theme components. Components are listed on the left side of the Editing area.

Each image shows a component that has been placed on a mobile device screen. A component may be used in several layouts and the images shown are only one possible layout.

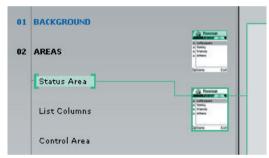
The component is shown surrounded by a green rectangle.

When an item is selected, a green line connects the component title in the task list to the component and the Editing area.

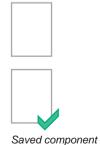
A tick mark is shown in the lower right corner of the component image when an item has been saved.



Components display bar



Selected component



Theme Studio Installation Gallery Editor

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Other dialogs

Editing section

The component editing section consists of four sections:

- Items display bar
- Editing area
- Editing toolbox
- Command bar

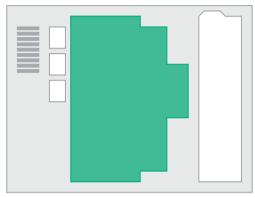
Items display bar

A component may be made up of several items. These items are usually different versions of the same bitmap used to indicate a component's state. For example, tab components have different bitmaps for each active tab (a two tab component contains two bitmaps, a three tab component contains three bitmaps).

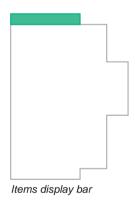
If a theme component contains items, they are shown at the top of the Editing area in a scrollable list.

You can select and create items in any order. A tick mark is shown in the left bottom corner of the item when an item has been saved.

In some cases (for example, navipane background graphics, application icons), you can select multiple items to be viewed in the Editing area at the same time. Use the Ctrl and Shift keys to select more than one item at a time and drag-and-drop the items to the Editing area.



Editing section







select all items between the first and last selection select/deselect single items

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Editing area

Theme component contents are created in the Editing area. This area is surrounded by a green line with the edited items shown inside.

Theme components are shown using a sample layout. The area outside the actual theme item is dimmed. To adjust the dimness select the Dim command from the toolbox. The edited item is indicated with crop marks.

Editing toolbox

The Editing toolbox is divided into three parts according to the tool type: view modification, component editing, and component information tools. The tools available depend on the component and its editing state. Selectable items are shown in black, items that cannot be selected are shown in grey.

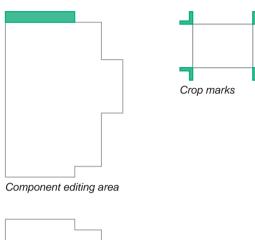
The component information section is shown only with relevant items.

The view modification tools are:

- Zoom
- Sections
- Dim
- Icon wizard
- Design aids
- Pan

The component editing tools are:

- Place
- Move
- Scale
- Rotate
- Mirror
- Tile
- Mask
- Colour





Editing toolbox



Theme Studio Installation Gallery Editor

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The pan, place, move, scale and rotate tools are not shown in the tool list but can be activated using keyboard shortcuts and mouse actions in the Editing area. The tools are described in the following sections.

Zoom

You can adjust the zoom in two ways.

Click the Zoom tool button and select a new value from the pop-up list. The currently active value is shown next to the tool button. You can also modify the zoom using keyboard shortcuts.

When zooming is activated, the mouse pointer indicator changes to a magnifying glass graphic. The magnifying glass contains a '+' sign when the zoom in function is active, and a '-' sign when the zoom out function is active. At maximum or minimum magnification levels the mouse pointer indicator is empty.



50 % 100 % Ctrl+1 200 % Ctrl+2 300 % Ctrl+3 400 % Ctrl+4 500 % Ctrl+5 600 % 800 % 1200 %

Zooming level selection list

1600 %

Ctrl+Spacebar+LeftMouseKey zoom in Ctrl+Alt+Spacebar+LeftMouseKey zoom out Ctrl+ '+' (plus) zoom out Ctrl+0 fit the view Ctrl+1 100% magnification Ctrl+2 200% magnification Ctrl+3 300% magnification Ctrl+4 400% magnification Ctrl+5 500% magnification Ctrl+6 500% magnification	
--	--

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Sections

Some components can be divided into smaller sections (for example, highlights).

You can view these sections by toggling them on and off with the Sections tool. You can then edit section contents separately. The currently active section is indicated by crop marks. You can activate a different section by selecting it with the pointer or by using the keyboard shortcuts.

Dim

You can adjust the dimness of the selected image.

The sample image is shown dimmed behind the editable component. The dimming scale is 0-100%, from a fully visible sample image to an opaque background.

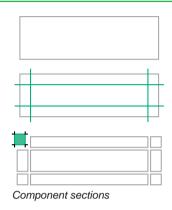
Design aids

With some components, you can display design aids to help you create components. These semi-transparent placeholders indicate placement of another layout item or component area division.

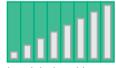
Icon and text placeholders are shown on components where the component contains these items on top (for example, tabs).

Level areas are shown with items where the component functionality is achieved by revealing parts of the component graphics (for example, volume graphics). Section areas are shown with components that consist of sections. Note that the section aids are shown only when the Sections tool is active.

Design aids do not affect the use of any other tool.







Level design aids



Section design aids



Ctrl+ArrowUp

activate the section to the left (of the active section) activate the section to the right activate the section below the active section activate the section above the active section

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Pan

When items are zoomed so that the editable component or items do not fit the view, you can scroll the view by using the scrollbars or a keyboard shortcut.

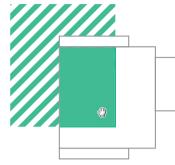
Place

You can drag and drop an image into the Editing area from the browser tab views (page 34). You can also place the image using a keyboard shortcut from the clipboard. The image is placed in the top left corner of the highlighted area or section. Images are shown using one image pixel per mobile device display pixel. The image or PC screen PPI values are not used.



Move

You can drag and drop an image into the Editing area. Select the image, hold the mouse button down, and move the pointer to a new location. Images may also be moved using keyboard shortcuts.



Panning an image



Shortcuts:

Spacebar+LeftMouseKey pan (move to the pointer direction)

Ctrl+v place the image from the clipboard to the Editing area

Ctrl+c copy the image to the clipboard
ArrowLeft move the image one pixel to the left
ArrowRight move the image one pixel to the right
move the image one pixel up

ArrowUp move the image one pixel up move the image one pixel down



See also:

Double-click on the image opens the component in the preferred pixel paint application (page 30).

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Scale

You can scale an image by dragging the image borders or corners. When scaling is possible the cursor changes into scaling arrows.

Moving the top left corner leaves the bottom and right side of the image static and adjusts the top and left sides. The other corners are affected in a similar manner. Dragging a border affects the height or width of the image to be scaled.

Scaling is arbitrary. You can use keyboard shortcuts during scaling in order to keep the image ratio aspect fixed.

Rotate

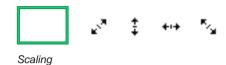
You can rotate an image by turning the image from the corners. When you place the pointer near the outside edge of an image corner, the pointer changes into a rotate cursor.

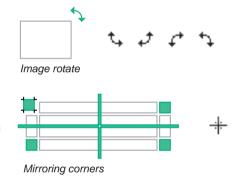
Mirror

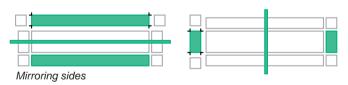
This tool can be used together with the Sections tool to copy and mirror graphics from one section to another.

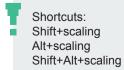
You can mirror a corner section to all other corners. You can mirror a side section horizontally or vertically.

An axis is shown when the tool is active. Select the axis with the left mouse key to carry out the action.









scale the image with fixed aspect ratio scale the image according to the image center scale the image according to the image center and with fixed aspect ratio

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Tile

When an image is smaller than the component area, use the Tile tool to fill the rest of the area.

Tiling is affected by the position of the image. When an image is placed off the top left corner, tiling will be based on the offset position.

Mask

Mask is used in some images to remove the unwanted pixels to be shown in the UI. Masks are created with:

- the masking wand
- the masking pen

Areas made up of a single colour can be masked with the masking wand. Select one pixel to affect all the connected pixels of the same colour to be included in the mask.

You can mask and unmask single pixels with the masking pen.

To paint a mask on the selection, select unmasked pixels with the tool. When the pen tool is applied to the masked area, the edited pixels become unmasked.

Masking is shown with a 30% red overlay on top of the image.

To open the mask bitmap in the pixel paint application, double-click on the mask. White colour is used where the mask is not applied; black colour is shown where the mask is effective.

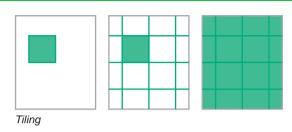
Items can have two different types of masks: a 1-bit masks (hard masks) and an 8-bit masks (soft masks). An 8-bit mask is a greyscale image and allows creation of soft edges (anti-aliasing), and semi-transparency.

The mask type is a component specific. Generally 8-bit masks are applicable unless otherwise indicated.



Note:

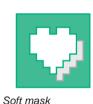
If a component supports an 8-bit mask, the Mask tool is shown in black. If a component supports only a 1-bit mask, the Mask tool is followed by '(1-bit)'. If a component does not support the use of a mask, the Mask tool is shown in grey.













Hard mask placed on image





Soft mask placed on image





Hard mask applied

Soft mask applied

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Colour

You can use the Colour tool to adjust the colour in different ways. When you select the tool, a pop-up window appears.

To adjust the colour, select one from the palette, enter RGB values, or adjust the Saturation or Brightness sliders.

The tool contains functions that may be used in connection with images:

- Colourise
- Dither
- Optimise
- Default colour palette

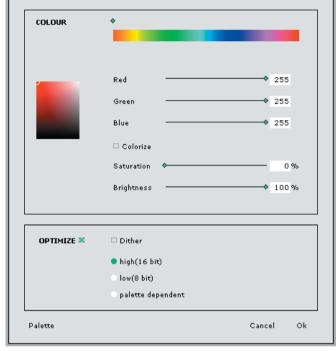
Colourise

The Colourise tool is used to unify the hue values of an image.

Dither

You can dither images when changing colour depths. The algorithm used is Floyd-Steinberg error diffusion with a 50% threshold value.

The option is not available for palette dependent optimising.



Colour pop-up window



Note:

The colour seen on the mobile device display may not correspond fully with the colours seen in the application. Device displays vary according to the technology and colour depths used.

You can check the colours on a real mobile device display by sending sample images to the device (page 33).

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Optimise

You can change the colour depth of the images by selecting:

- high (16-bit)
- low (8-bit)
- palette dependent

Select the high palette option to change the colour depth of the image to 16 bits per pixel. This means that there are 65 536 possible colours to use.

Select the low palette option to change the image colour depth to 8 bits per pixel. Image colours are remapped to use 216 WEB safe colours.

A low colour setting may be applied to simple pixel graphics, like icons, in order to reduce the SIS file size.

Select the palette dependent option to index the image to a device colour scheme palette.

Indexing is carried out according to the following steps:

- First the image is saved as a greyscale image.
- Then the image is indexed to scheme values only 16 shades of grey, black and white are used.

When the device palette is applied, the images change colour according to the active colour palette setting in the mobile device. The colour palette is user changeable and the options available may vary from one product to another.



Original 24 bit image



16 bit image, no dithering



16 bit image, dithered



8 bit image, no dithering



8 bit image, dithered



Phone palette, no dithering (blue palette active)



Note:

In the Theme Studio the palette indexed colours are shown in the shades of grey, white and black. The colours from the active palette are visible only in the mobile device.

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Default colour palette

You can set the default phone colour palette for a theme.

To open the Default colour palette window, click the **Palette** button at the bottom of the Colour pop-up window.

The Series 60 Platform offers different colour palettes.

These palettes may be used to render theme components by indexing the images to the palette. For example, icons, navipane background gradient and solid images may be rendered.

Select the active palette by clicking the radio button next to the row of colours.

Icon wizard

You can use a transformation tool to copy and scale application icons from one icon component group to another.

Icons are used in two different places in the display layouts – in the application shell (Menu) and in the context pane in the applications. Therefore, icons are not of equal size.

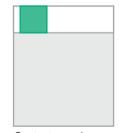
Create an icon either to Application shell or Context pane component group. Select the other component group and the icons you wish to copy. Activate the Icon wizard tool and the corresponding icons in the first group are copied to the editing space. Use the slider to adjust the scaling factor for resizing. Slider values range from 50% to 150%.

Images are scaled while keeping the colour values of the nearest neighboring colours. No dithering is used.

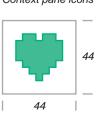
The tool is applied to all items in the editing space. The tool may be used to scale all application icons at the same time.



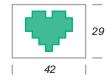
Palette selection pop-up window



Context pane icons



Application shell icons





Note:

The palettes used in mobile devices may vary from one product to another. End users can use the Themes application to change the palette settings.

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Command bar

The command bar is shown below the Editing area. It contains the following commands:

- Edit
- Clear
- Preview
- Animate
- Draft
- Save

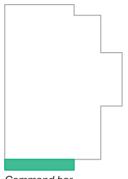
The available commands depend on the editing state and the component. Selectable items are shown in black. Items that cannot be selected are shown in grey.

Edit

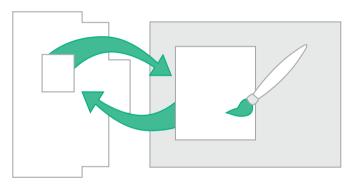
You can open a component bitmap image or sound file in the preferred editing application by selecting the Edit command or by double-clicking the item in the Editing area.

The item is shown as a new document in the editing application. You can edit the file and return to Theme Studio by saving the changes. If you close the file without saving, no changes are made.

You can also use keyboard shortcuts to transfer images between the paint application and the Editing area.



Command bar



Editing in pixel paint application



Note

The image file format in the editing program is BMP. The edited file can not contain any additions that prevent saving it with its original title and format.

The sound file formats WAV and MP3 are supported. Additionally there may be some device specific formats included.

Ctrl+c copy the image to the clipboard

Ctrl+v paste the image from the clipboard to the Editing area

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Clear

You can delete a saved component by selecting the Clear command. This removes the component from the saved items list, empties the Editing area, and updates the preview images.

Preview

You can view unsaved theme components on sample layouts by toggling the Preview command on and off.

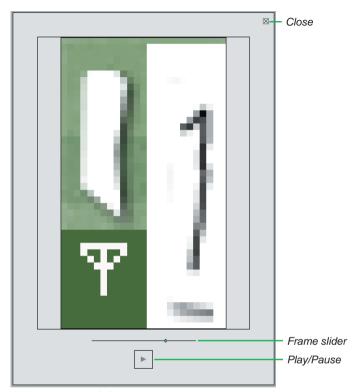
Components are not saved until you select the Save command.

Animate

You can preview some of the components as an animation. Animations are shown in a pop-up window.

You can control the animation by toggling the Play/Pause command at the bottom of the window. When you pause the animation, you can move the slider to view the details of the design more slowly.

To close the window, click the **Close** button in the top right corner.



Animate pop-up window



Note icons (page 46)

Pop-up windows (page 50)

Tab graphics (page 53)

Signal strength and battery level components (page 56)

Volume level graphics (page 58)

Wait/Progress bars (page 62)

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Draft

You can save draft versions of the saved components with the Draft command. Drafts are shown in the Components tab view in a radio button list as optional choices for the component.

You can create several drafts for a component and select the one to be used in the theme later.

The saved drafts are also shown as options for other edited themes in the Themes tab of the Image/component browser (page 34).

Save

To save a component, select the Save command or use the keyboard shortcut.

When you select this command, the theme task, component group, component and item lists are updated. A tick mark and completed colour indicator is shown in the component, item and task lists.

The preview images are updated in the Preview section. You can continue with the theme creation while the update is in progress.



Component drafts



Saved indicators



Note:

You may undo a save by selecting the keyboard shortcut Ctrl+z or by selecting the Clear command.

Ctrl+s save a component and theme

Ctrl+Shift+s copy and save a theme with a new name

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Preview area

The preview window contains a set of UI images that are updated as the Preview command is selected.

A term 'updating...' is shown after the window title when the update is in progress.

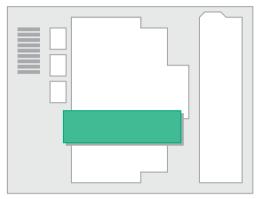
The sample images are shown using 50% magnification. When you move the pointer over an image, magnification increases to 100%. You can zoom in and out the example images with the keyboard shortcuts.

You can scroll the list using the scrolling arrows.

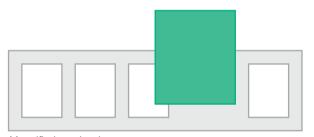
If you have added a sound it is played when the example image is zoomed.

You can send an image to a mobile device or save it to disk by clicking the image twice. This allows you to view the designs on the actual display of the target mobile device.

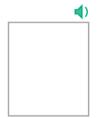
To close the window, click the **Close** button in the top right corner.



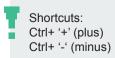
Preview window



Magnified preview image



Preview image with a sound



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Image/component browser

You can use the browser area to select images for component creation. The area contains three tabbed views:

- Themes
- Components
- Browser

You can drag and drop items from any of the browser views to the Editing area.

Theme design files

The theme design files are shown in the Themes tab.

You can expand a theme design file to view the components by clicking on the expand/collapse arrow. Components are shown using the same structure as is used in the task list on the left side of Theme editor view.

By default, the view of the currently edited theme is expanded.

Each component contains the currently selected item (saved item) and possible alternative designs (drafts).

To change the item to be used for the theme, click on the draft image.

Components

Images used for the same component in other themes are listed in the Components tab view. You can select components from several themes from the Component browser by double-clicking or dragging them to the Editing area.

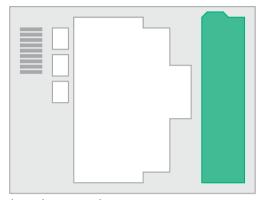
Directory browser

The Browser tab can be used to search for images from the computer or network directory.

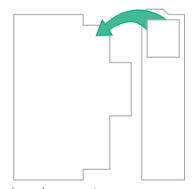


See also

The tab view contents and commands are the same as those used with the theme browser in the Theme gallery view (page 12).



Image/component browser



Dragging an image/component

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Theme creation task

The creation of a theme is divided into three steps:

- 1. initial data entry
- 2. component creation
- 3. creating a SIS file

Theme creation dialog

The initial set of theme attributes are entered in the Create New Theme dialog. Select the Create New Theme command from the command bar or choose the New command from the Theme pull down menu to open the dialog.

In this dialog you can:

- enter the name of the theme
- enter the name of the author
- select the device model (or base graphics)
- adjust the initial set of components

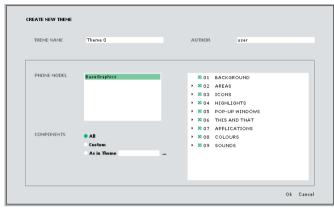
The theme name is used to save the theme design file. You can enter a different name for the SIS file.

Different device models may support different sets of theme components.

You can create a theme based on a specific mobile device by selecting the model.

The component list is modified to reflect the supported components.

The application also contains an option to create themes based on Series 60 reference graphics (base graphics). These graphics are not necessarily used in any specific device.



Create New Theme dialog

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Note:

You can import device model plug-ins to the application by selecting Updates command from the Help pull down menu.

Use Ctrl- and Shift-keys to select the several devices from the model list.

If a theme contains items that are not supported by a specific device model, the excess items are ignored in the device.

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You can select all theme components available by choosing the All option.

You can select one component or a component group by marking the items in the numbered list. Component groups can be expanded/collapsed by double-clicking them or by clicking the arrow next to the component group.

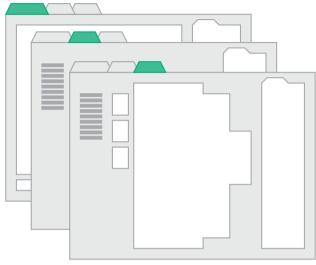
The Custom option is automatically selected when you use the numbered list to select components.

You can base your component selection list on an existing theme. You can search for the theme from the computer or network directory by selecting the As in Theme option.

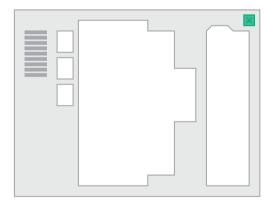
When you click the **OK** button, the Theme editor opens. The new theme name is shown in a tab next to the Theme gallery tab. You can switch between the views by clicking the tabs.

You can cancel theme creation by clicking Cancel.

You can save a theme by selecting Save from the Theme pull down menu or by using a keyboard shortcut. You can close a theme by selecting the Close icon in the top right corner of the theme view.



Switching between gallery view and themes



Closing a theme



Note:

You can have several themes open at the same time. To switch from one theme to another, click the tabs.

Ctrl+s save a theme

Ctrl+Shift+s copy and save a theme with a new name

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Background

This section in the task list is used to create the general background image.

The component is used as a background for the entire user interface unless backgrounds for specific areas or applications are defined (see the next sections).

To create a background you can:

- 1. Place an image in the Editing area:
 - Paste an image from the clipboard.
 - Drag and drop and image from the browser views.
- 2. Modify item position, size and orientation:
 - Move an item holding the left mouse key.
 - Scale using the image borders.
 - Rotate using the image corners.
- 3. Modify item colour values and dithering:
 - Use the Colour tool to make modifications.
- 4. Edit an item in a pixel paint application:
 - Double-click an image to open the bitmap for editing.
- 5. Preview the sample images:
 - Toggle Preview command on/off.
- 6. Save results:
 - Select the Save command.



Camera

Background

(theme component placing is shown as a

green item on the device screen)

Pinboard

Default UI look



Themed background



Note:

If there is no specific theme background image defined, white colour is used by default.

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Areas

The following areas may contain a specific background image:

- status area
- navipane
- list column
- control area

Status area

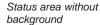
The status area contains general UI items that are explained briefly in this chapter since the background image specific to the area affects the visibility of the items. The items are:

- signal strength indicator
- active application indicator (application context pane icon)
- application or main pane content title
- navigation area
- status indicators



Status area







Status area with background

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Signal strength

Signal strength indicates the level of network reception. A complete bitmap displaying a full strength signal is shown a part at a time. This creates the effect of different strength levels (page 56). Negative 'off' values may be drawn into the status area background image.

The network or packet data indicators are shown below the signal strength indicator. You can define the icon colour. When signal reception is turned off, that is during flight mode, an x-mark is shown instead of the reception levels.

Application icon

The application icon that is currently active is shown in the top left corner of the screen. Icons are masked to reveal the status area background.

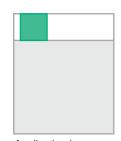
In the Phonebook application, the icon may be replaced with a thumbnail image of the phonebook entry.

Title pane

An application title or main pane content name is shown in the title pane. You can change the colour of the text. The text may occupy one or two rows.







Application icon



Title





See also:

Status area background image (page 41)
Application icons (page 44)
Signal strength indicator (page 56)
Idle mode background image (page 63)
Adjusting icon colours (page79)
Adjusting title text colour (page 81)



Thumbnail image



Title, two rows of text



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Navigation area

In the navipane, visual aids are shown to the user in order to help navigate between different UI views. These aids may be text, icons, or both. For example:

- short information texts
- list icons and list ordering numbers
- view tabs with icons or text
- folder tree

You can modify the item colours (texts, icons), indicator appearance (tab graphics), navigation arrows and the background graphics (navipane background image).

Status indicators

Some of the application or device state indicators are shown in the top right part of the status area.

These indicators are usually shown only momentarily and a maximum of three indicators can be shown at the same time.

You can adjust the indicator colour.



Navigation area



Status indicator area







List ordering numbers



Tabs with icons



Folder tree



Status indicators



Theme 'Grind II'

See also:

Navipane background images (page 41) Tab graphics (page 53) Arrow graphics/navigation indicators (page 61) Adjusting status icon colours (page 79) Adjusting Idle mode icon colours (page 79)

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Status area background

The area background graphic is shown behind all status area items.

Navipane backgrounds

There are two navipane background images used:

- navipane solid image
- navipane gradient image

A solid image is used as background if the navipane contains navigational aids such as text, icons or tabs. The solid image provides a clear background for the items on top.

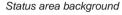
The gradient image is used when there are no items in the navipane.

You can choose one of the following to use as the navipane background image for an item:

- no graphics
- default UI graphics
- theme specific graphics

To change the setting, drag and drop an item from the component tab area to the editing window, or supply a graphic to the theme.







Navipane gradient



Solid navipane background



Gradient navipane background

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When the no graphics ('none') option is selected, there is no specific navipane background image used. The status area background or the screen background is shown in this case.

The default UI solid colour and gradient graphics are used if you do not define any theme specific image or do not select the no graphics option.

The default UI graphics are rendered using the phone colour scheme palette. Therefore, the colours change according to the end user setting.

When the graphics you create are saved, the third option (theme specific) is used.



Navipane tab graphics (page 53) Navipane volume levels (page 58) Arrow graphics (page 61) Navipane icon colours (page 79) Navipane text colours (page 81)

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List columns

The mobile device UI uses different types of lists. Lists have some items in common:

- list columns
- list ending graphics (slice)

Columns have three different widths (6 pixels, 16 pixels and 51 pixels). In the default UI, columns have a solid black line border.

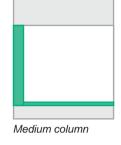
You can replace this line with a combination of column and slice bitmaps.

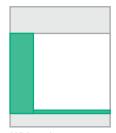
Control area

A theme can contain a specific control pane image that is shown at the bottom of the display.



Narrow column





Wide column



Control area



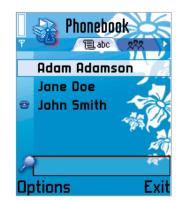
Additional control pane images can be used in the Idle mode and with pop-up windows.



General background image (page 37) Control pane image for pop-up windows (page 51) Control pane image for the Idle mode (page 64)



Column examples





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Icons

Application icons

A theme may replace the UI application icons with graphics designed for the theme style.

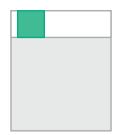
A theme may contain none, all, or a selected group of icons. If there is no specific application icon in the theme, the default UI application icon is used.

There are two application icon versions:

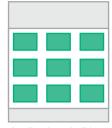
- context pane icons
- application shell icons

The context pane icon is shown in the status area. The icon is used to indicate the active application that is currently open. The icon size is 44x44 pixels.

The application shell icon is shown in Menu and the application switching window. The icon bitmap area is 42x29 pixels (width x height).



Context pane icons



Application shell icons























Note

An icon bitmap size is larger than the actual image. This extra space allows more freedom when creating an icon. If the area is fully utilised the image may look crowded on the device display.

For some icons there are two versions listed. These icons are used in different software releases.

You can view multiple icons in the Editing area at the same time (page 21).

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Icon wizard

You can copy a corresponding icon from the other icon group by selecting the Icon wizard tool.

Move the slider mark to adjust the scale. Slider values range from 50% to 150%.

Scaling is done by adjusting the colours to the neighboring colour.

Masking

You can mask icons in order to show the area background within the icon bitmap area.

Masks used in themes are created with the Mask tool.

A mask is an 8-bit, greyscale image.

List icons

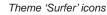
List icons group contains large and medium icons that are generally used to create application submenus or content lists.

The icons are grouped by applications:

- Media Gallery
- Messaging
- Settings
- Messaging
- Pinboard
- Other list icons







PHONEAPP.

Message:

4

Profiles

Options

Applications

Phonebo.

Cameras

Pinboard



Theme 'Grind II' icons

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Note icons

Note icons group contains still or animated images displayed in various notes.

You can add frames to an animation by clicking Add New Frame button.

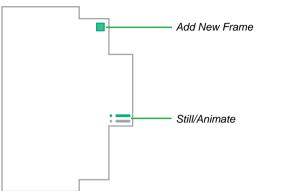
You can adjust the frame duration by double-clicking the frame or by selecting the frame with Alt key pressed. The animation duration pop-up window is displayed.

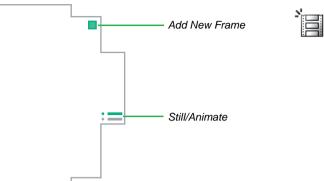
You can adjust the duration of multiple frames at the same time by selecting first the frames with Shift or Ctrl keys.

You can toggle the animation on/off by selecting the **Still/Animate** item type from the component information section.

Miscellaneous icons

The group contains find field indications for Phonebook, Browser, and Pinboard, and a waiting animation for Browser.







Animation frame duration pop-up window



Note:

The default frame duration is 160 milliseconds.

It is preferable that the fullI note animation duration does not exceed 1.5 seconds due to the minimum time the note is displayed.

Alt+LeftMouseKey

open animation frame duration pop-up window

The Application shell folder icon is listed in the Other list icons group.



Selecting multiple items at the same time (page 20) Using Animate command to test the animation (page 31)

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Highlights

Highlights may be designed to follow a theme's appearance. The generic highlights used are:

- list highlight
- grid highlight
- input highlight

Highlight versions and structure

A theme can contain two versions of list and grid highlights:

- List/Grid Highlight
- New List/Grid Highlight

List/Grid Highlights are used in Series 60 devices based on software releases 2.0 -2.1 (for example, Nokia 6600, 7610).

New highlights are used in devices based on software release 2.6 (for example, Nokia 6630), if existing in a theme.

The highlights can contain nine bitmaps:

- four corner bitmaps
- four side bitmaps
- center bitmap

Additionally the new highlights can be made of single graphic that is scaled as one entity. This allows better use of gradients and semi-transparency.

You can select the highlight type from component information section.



Note:

It is advisable to create both versions of the highlights while creating a new theme.



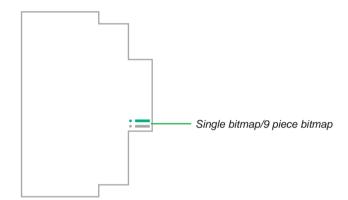


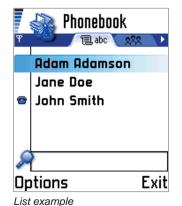


Input highlight

List highlight

9 section bitmaps







Grid example

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List highlight

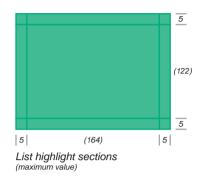
The list highlight is used in all the lists (with the exceptions of the Edited settings list or the Form selection list).

List highlights are of different sizes, but only one theme component is used.

You can create a component according to the largest highlight.

When bitmaps are used in smaller sized components, graphics are shown starting from the top-left corner of each part and cropped on the right and bottom borders (9 piece highlight).

One piece highlight is scaled as one entity to all highlight sizes.















>>

See also:

Using Sections tool to view component parts (page 23) Masking highlights to show background (page 26)

Different sized highlights (base graphics)

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Grid highlight

The grid highlight is used in all grids regardless of their cell size. For example:

- application grid
- GMS image selection
- Pinboard application grid
- special character selection grid
- Calendar week and month view grids

The rules and tools that apply for list highlight creation also apply for grid highlight creation.

Input highlight

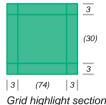
The input highlight is used to indicate end user data entry area. For example:

- form fields
- find boxes
- data queries
- data entry is Settings
- title/search string entry in Pinboard

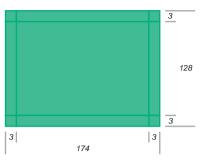
The highlight consists of nine bitmaps:

- background bitmap
- four corner bitmaps
- four side bitmaps

The size of the background bitmap is the same as the input area. On top of the background you can place side and corner bitmaps.



Grid highlight sections (maximum value)



Input highlight sections







Calendar month view



Pinboard



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Pop-up windows

You can create theme components to modify pop-up window graphics. The components are:

- general pop-up windows
- application switching window
- lower screen area

General window graphics

There are two pop-up window components used:

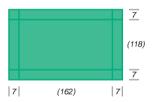
- general pop-up window
- submenu pop-up window

Both components have the same structure:

- four corner bitmaps
- four side bitmaps
- center bitmap



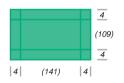
General pop-up window



General pop-up window sections (maximum value)



Submenu pop-up window



Submenu pop-up window sections (maximum value)



General pop-up window



Submenu pop-up window

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General pop-up window graphics

General pop-up window graphics are used for all windows with the exception of submenus. These windows are:

- options lists
- other pop-up lists
- notes
- queries
- soft notifications
- incoming call/outgoing call

The window is surrounded with a five pixel wide frame. The top and bottom parts are always displayed. The size of the side and center parts vary according to the pop-up window height.

Submenu pop-up window

The submenu pop-up window has a special theme component applied due to its more limited window size.

The submenu pop-up window graphics are used also in Calendar information pop-up window and Chinese/ Japanese text entry windows.









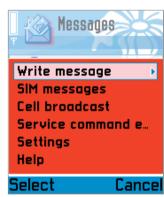
Note



Query







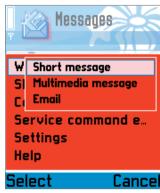
Theme 'Surfer'



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Submenu window



Theme 'Surfer'



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Application switching window

Application switching pop-up window graphics can be modified to follow a theme's appearance.

This theme component's graphics are:

- window ending graphics
- lower screen area slice

General pop-up window graphics are used in the window top, center and side areas.

Window ending graphics are shown when there are more than three active applications to 'switch' to.

The lower screen area slice graphics may be used to smooth out the active control pane theme graphics with the dimmed upper screen area.

Lower screen area

Note:

See also:

(page 65)

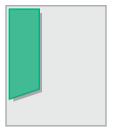
A theme can contain lower main and control pane graphics that are only used with pop-up windows.

The window ending graphics need to be masked so that

the underlying screen can be revealed.

Creating control pane graphics (page 43)

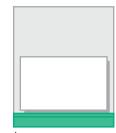
Creating control pane graphics for the Idle mode



Application switching window



Window ending graphics



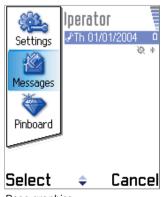
Lower screen area



leBrowse

Cance







Settings

Calendar

PHONEAPP

Select



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Base graphics

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Tab graphics Signal and Battery Volume indicators Slider graphics Navigation indicators Wait/Progress bars

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This and That

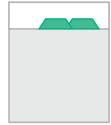
The This and That section contains a different variety of theme components:

- tab graphics
- signal and battery indicators
- volume level indicator
- slider graphics
- navigation indicators
- wait/progress bars

Tab graphics

Tabs are shown in the navipane. They indicate selectable views and may contain either icons or text.

The end user selects the active tab with the horizontal joystick movement. The tab to the left/right is highlighted and the look of the previously active tab changes to inactive.



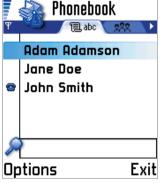
View tabs

There can be a different number of tabs shown:

- two tabs
- three tabs
- four tabs
- two long tabs
- three long tabs

Create the tabs in the same way as any other theme component. However, extra caution needs to be taken to ensure that icons or text on top of tabs are shown within the active/passive areas.

Creating tab components is similar in all five cases.



Tab views



s Theme 'Surfer'







Phonebook



Note:

You can test the results using the Animate command, or by displaying the icon and text placeholders with the Design aids tool.

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Tab graphics Signal and Battery **Volume indicators** Slider graphics **Navigation indicators** Wait/Progress bars

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Two tabs

The two tabs component is used when there are only two views to choose from.

The tabs and tab contents are fully visible.

Three tabs

The three tabs component is used when there are three views to choose from.

All tabs are fully visible and the tabs can contain either text or icons. Item sizes are smaller than those used when viewing two tabs.

Four tabs

The four tabs component is used when there are four or more views to choose.

All four tabs are fully visible. When there are more than four views available, the tab contents (icons or text) are scrolled as the leftmost or rightmost tabs are highlighted.



Two tabs



Three tabs









Four tabs





















Theme 'Grind II'

Phonebook ¶abc \







Using Design aids tools (page 23) Using the Animate command (page 31)

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Two long tabs

The two long tabs component is used when there are two views containing long textual titles.

The active tab and only a small part of the passive tab are shown in the navipane. The passive tab has no content.

Three long tabs

The three long tabs component is shown when there are three or more tabs containing long textual titles. The active tab and small sections of the passive tabs are shown in the navipane. The passive tabs have no contents.

Tab icon/text colours

You can choose the colours for the active and passive tab icons and texts.

Icons shown in tabs are black and white. The white area is masked so that the tab background graphics show through. You can change the colour used to draw the black part of the image.

A separate colour can be used for items shown on a highlighted tab and on a passive tab(s).



Two long tabs







Three long tabs









Application





See also

Adjusting icon/text colours (page 79)



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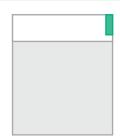
Signal and battery indicators

The mobile device UI contains two important strength level indicators:

- signal strength indicator
- battery level indicator

Both indicators have the same structure. Strength levels are shown by revealing the strength bitmap in sections. You can change the level bitmaps, but the sections are predefined.

Signal strength indicator



Battery level indicator

Signal strength indicator

The signal strength indicator is shown on the top left corner of the screen.

Optimum reception is indicated by having all seven levels show. No reception is indicated when no levels are showing.

It is important that levels are clearly indicated, as reception clarity and network availability may affect the end user's actions.

Full screen applications, such as Pinboard, Speed dial and games, have no signal strength indicators.



Signal levels







See also:

Using the Animate command to test the levels (page 31) Creating signal off indicator in the background (page 39)

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Battery level indicator

The battery level indicator is shown only when the device is the Idle mode or during power saving mode when the mobile device is being charged.

Like the signal strength indicator, the battery level indicator consists of seven levels. The indicator measures the battery energy levels that are available.

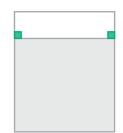
Icon colours

The signal strength and battery level icons are shown beneath the strength levels.

You can change the colour of these icons. The same colour will be used for both



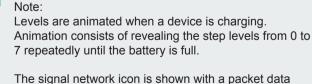
Battery levels



Signal and battery icons





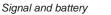


indicator when the network is available and the user has subscribed to it. The same icon colour is used.



Adjusting icon colours (page 79)







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Volume level indicator

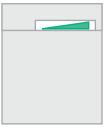
The volume level is shown using a scale with ten levels. Levels are indicated in the default UI appearance with bars. These bars may have different on and off visual representations.

The volume level is shown in a similar way to the signal strength and battery levels. The level is shown using predefined steps in a single bitmap. A section of this bitmap is shown as levels increase or decrease. You can change the level bitmaps but the size and positioning of the level areas are fixed.

Volume levels are shown using three different layouts:

- volume level indicator shown in the navipane
- saved volume level indicator shown in settings lists
- edited settings volume

Focused settings item indication (page 77)



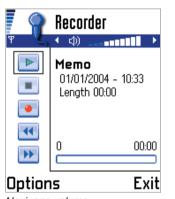
Navipane volume



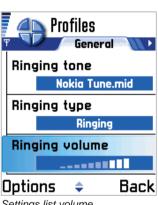
Settings list volume



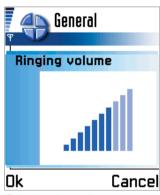
Edited settings volume



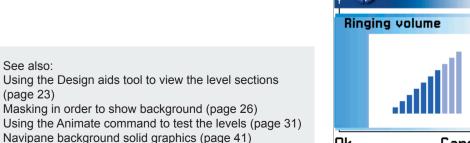


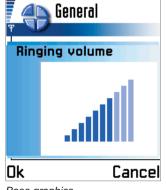


Settings list volume

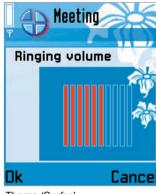


Edited settings volume





Base graphics



Theme 'Surfer'



Theme 'Frost II'

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Navipane volume level indicator

Volume adjustment is shown on the navipane during calls and in some applications (such as Recorder and Media player).

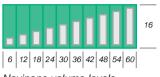
Volume indicator in settings list

Settings list volume graphics are shown in the settings list selected option area.

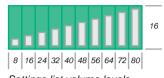
Edited settings volume indicator

Volume levels are edited in an opened settings view.

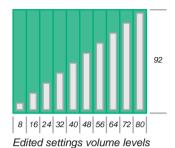
As the Editing area is much larger than with other volume indicators, the indicators are increased in size.







Settings list volume levels

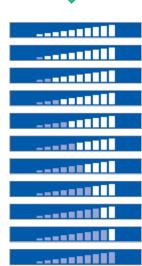






Volume 'off' image





Bitmaps applied



See also

Using Design aids tool to view the level sections (page 23)

Using Animate command to test the levels (page 31) Settings item background graphics (page 78)

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Slider graphics

Sliders are used in the UI in similar way as volume indications. They measure levels. However, sliders are not limited to a number of adjustable steps.

The slider graphics consist of:

- slider line
- slider marker

You can replace the slider marker bitmap. The slider is used in different layouts:

- settings lists
- edited settings items

Settings list slider

The settings list sliders are shown on settings item focus background.

You can replace the slider marker bitmap.

Edited settings slider

The edited settings sliders are shown when a settings item is opened for editing. The background used is the one designed for the settings option item area.

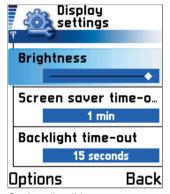
You can replace the slider marker bitmap.



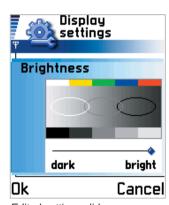
Settings list slider



Edited settings slider



Settings list slider



Edited settings slider



Base graphics



Theme 'Surfer' slider



Theme 'Grind II' slider

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Navigation indicators

Arrowheads are used in the default UI look and feel to indicate possible navigation directions. The items are used in/as: navipane scrolling, list/grid scrolling and submenu indicator.

Navipane left/right scrolling indicators

The left and right scrolling indications are shown at the both ends of the navipane.

Indicators are either visible or invisible. If they are shown, scrolling in the indicated direction is possible.

You can change the left and right scrollling indicators with black and white images where the black pixels are shown in the theme and the white is used as mask.

The colour displayed is the value defined for navipane texts and icons.

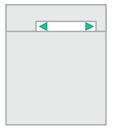
Main pane up/down scrolling indicators

Up and down scrolling indicators are shown in the control pane in the lower screen area.

Indicators are used to show the position of the highlight within the list/grid viewed. At the beginning of the list, only the bottommost indicator is visible to show that there are more items to be found by moving down.

At the end of the list, only the topmost indicator is clearly visible. In the middle of the list, both indicators are equally visible.

The rendering colour is changed smoothly as the highlight is moved in the list.





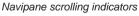


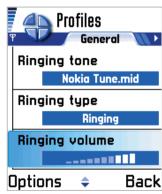
Up/down scrolling indicators



Submenu indicator







Up/down scrolling indicators



Submenu indicator



Using Animate command to test the tab graphics (page 31) Navipane background solid graphics (page 41) Adjusting icon/text colours (page 79)

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Indicator graphics

The indicator graphics consist of two parts: upward indicator and downward indicator.

The graphics are aligned vertically and have fixed size. You can replace the graphics with black and white images where the black pixels are shown in the theme and the white is used as mask.

Indicator colours

Gradient of 16 different colour values is used to draw the indicators. The colours are taken from the gradient bitmap. Use the Design aids tool to view the colour selection points (crossing of vertical and horizontal lines). You can replace the gradient bitmap.

Submenu indication

An arrowhead in the default UI appearance at the right side of the menu list item indicates a submenu. You can replace the indicator bitmap.

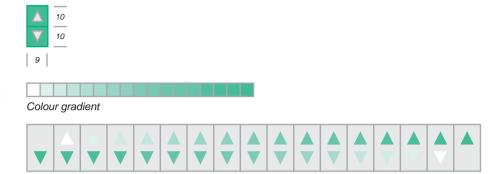
Wait/progress bar indicators

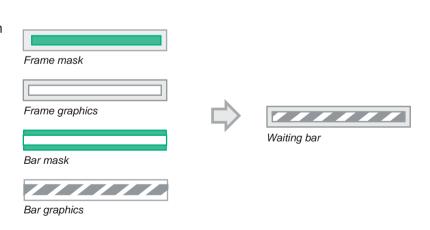
You can add the animated wait and progress bar indicators. The indicators consist of:

- frame graphics
- progress bar
- waiting bars

The frame graphics (long, short and Voice Recoder versions) are shown masked on top of the bar graphics. The progress bar is a still image. It is moved from left to right according to the action measured.

The waiting bar images are shown animated one after another, looping, until the action measured is terminated.







Indicator sequence

Using Mask tool to show background (page 26) Control pane background graphics (page 43) Pop-up window control pane background (page 51)

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Applications

Some of the theme items are specific to individual applications. These applications include:

- Idle mode
- Pinboard
- Calendar
- Settings

Idle mode

Idle mode is the basic level of the mobile UI.

Idle mode is used to show various items. The items on the display are:

- signal and battery graphics
- clock
- operator name or graphics
- date or silent profile indicator
- phone state indicators
- wallpaper image
- soft indicator texts
- selection texts

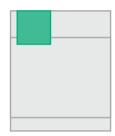
Signal and battery graphics

You can change the look of the signal strength and battery level graphics (page 56).

Clock

A digital or analogue clock is shown on the context pane. The end user can select the clock type shown. You can create clocks to match the overall theme design.





Signal and battery level indicators



Base graphics

Theme 'Surfer'



Theme 'Grind II'



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Operator name or graphics

The operator name is shown in the title pane. The end user can replace the name with a black and white operator graphic.

The operator name colour is the same as the one defined for the title texts (page 81).

Date or silent profile indication

The date, or profile name, is shown in the navipane. You can alter the colour used to render the text. The same colour value is used for all texts shown in the navipane (page 81).

Wallpaper image

End users can select a wallpaper of their choice for display in the Idle mode.

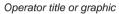
The wallpaper may be of any size and aspect ratio. The image is centered to the main area.

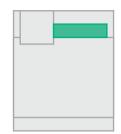
Phone state indicators

Mobile device states, such as keypad locked and Bluetooth reception activated, are shown below the navipane.

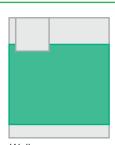
A semi-transparent white gradient is drawn underneath the status indicators. This is done to ensure enough visibility for the indicators as the background image can be of any colour because the end user can change the wallpaper image.



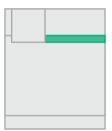




Date or silent profile indicator



Wallpaper



Phone status indicators

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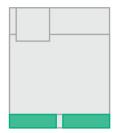
Other dialogs

Soft indicator texts

Soft indicators texts are shown on the right side of the main area to indicate different network specific items.

There can be several indicators shown or no indicators shown. The maximum number of text lines is six. As with the status indicators, a white gradient is drawn underneath the indicator texts in order to ensure better legibility.

Soft indicator texts



Selection texts and graphics



Background graphic

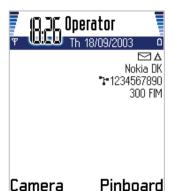
Selection texts

Selection key texts or an operator specific link bitmap are shown at the bottom of the display. The end user can change the text items through the settings.

You can adjust the colour of the texts.

Background graphics

Idle mode can have its own background image defined. If item is not defined, the general UI background image and/or area specific images are used.



Idle items on base graphics



Idle items on theme 'Grind II

>>

See also:

General background image (page 37) Status area background image (page 38) Control area background image (page 43)

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Analogue clock

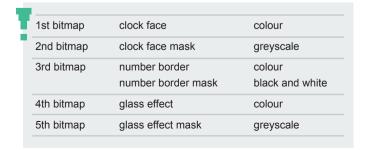
The analogue clock is made of five bitmaps, pointers, and date indication.

A theme may alter the bitmaps used, however, the outlook and position of the pointers and the date numbers are fixed.

Use the first clock bitmap (1) to render the basic clock table and possible background effects. The image may contain clock numbers, a shadow colour or a halo colour. The image can be a 16-bit image or phone palette indexed.

Use the second bitmap (2) as an alpha channel to mask the clock face. The bitmap is a greyscale image (soft mask), which means it may contain gradients to create soft fading transparency effects.

	Clock face (1)	Clock face mask (2)	
÷	Number frame (3)	Frame mask (3)	
	0	Pointers	
ф	Glass effect (4)	Glass effect mask (5)	Final result



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Use the third bitmap (3) with the date numbers. The bitmap may contain a border or area background. Create a hard mask to the third bitmap in order to remove the pixels not needed.

The date is rendered on top of the item mentioned above.

The pointers are drawn next. The size, colour and position of the pointers are fixed.

In addition, you can use the fourth bitmap (4) to draw effects, such as glass or lighting effect. Mask this effect using the fifth bitmap (5, soft mask).

The clocks are shown also in the Clock application. The analogue clock date numbers are not shown and the third bitmap is not used.

Due to software implementation reasons, the center









Examples of different effects using missing items



Note:

The center part of the pointers is not pleasing aesthetically. You can use the fourth bitmap to cover it.

You do not have to use all the clock bitmaps specified. Use the Preview command to test the different results.



Clock application

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Digital clock

The digital clock is made from masked number and separator character bitmaps.

Each individual number/separator is created from two bitmaps.

The first bitmap (1) contains the character and possible effect colour or texture.

The bitmap contains also a hard mask to create clear characters.

The second bitmap (2) is a soft mask used to create background effects.

The bitmaps overlap in the clock area in accordance with a fixed position.

The digital clock is created in two steps:

- background effect creation
- character creation

To create the background effect, use the first and second bitmaps. Mask the character bitmap with the second bitmap in order to create different types of background effects, such as a shadow or halo.

As the characters bitmaps overlap each other when drawn, the number/separator character images get mixed with the effects. The results may be smudgy.

Clear characters are created rendering the first bitmap with hard mask. The hard mask is drawn to the first bitmap. The results, numbers/separators, are drawn on top of the effect background.

In order to ensure that the characters do not overlap, they need to be placed in a defined 'safe' area.







Required numbers

Character (1) and soft mask (2)





Background effect creation (1) + (2, soft mask)









Effects result





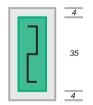


Final result

Character creation (1) + (1, hard mask)



Characters result







1st bitmap	character, effects character hard mask	colour black and white
2nd bitmap	effect soft mask	greyscale

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Pinboard

The Pinboard application main area consists of:

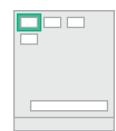
- background graphics
- wallpaper image

The user may choose to view the items in a format of a grid or list.

Pinboard background



Pinboard wallpaper



Highlight

Background

The application background creates a frame where the Pinboard items can be placed. The background graphics can be theme specific.

Wallpaper

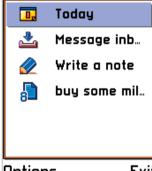
The center section of the background is a wallpaper image that the end user may replace with a preferred image.

Highlight

The highlight shown depends on the selected view format.

If the format is a grid, the highlight used is the one defined for all grids.

If the items are shown in a list, the highlight used is the one defined for lists.







Grid view



Base graphics



Theme 'Surfer'



Theme 'Grind II'



See also:

General background image (page 37) List highlight (page 48) Grid highlight (page 49)

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Title/search string entry

The title of the focused item and search string entry are shown in the general input highlight graphics.

Lower screen area

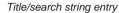
The lower screen area contains the general UI background graphics. If the control pane has an area specific background image defined, it is shown. The softkey colour is the one defined for softkeys in general.

Background graphics

The application background has the same structure as the Calendar or pop-up window backgrounds. The graphics consist of nine bitmaps:

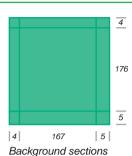
- four corner bitmaps
- four side bitmaps
- center bitmap







Lower screen area



The center section is used as wallpaper. End users may replace the wallpaper with their own image.



See also:

Using Sections tool (page 23) Using Mirror tool (page 25) Using Tile tool (page 26) Control area background image (page 43) Input highlight (page 49)

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Calendar

The Calendar application has three main views:

- dav view
- week view
- month view

The view background can be changed; the same background graphics are used in all three views. Additionally you can also change the colour of the separator lines as well as the colour of the event indications.

Background graphics

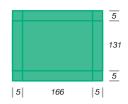
The application background has the same structure as the highlight or pop-up window backgrounds. The graphics consist of nine bitmaps:

- four corner bitmaps
- four side bitmaps
- center bitmap

You can design the corner bitmaps independently. The side and center area graphics can be of the maximum component area.



Background graphics





Calendar day view



Calendar week view



Calendar month view

See also:

Using Sections tool (page 23) Using Mirror tool (page 25) Using Tile tool (page 26)

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Line colours

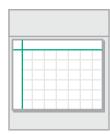
Lines are used to separate items from each other. The lines are divided into two groups:

- primary lines
- secondary lines

The primary lines are used to separate items of different type. In the Calendar the primary lines are shown between horizontal and vertical column titles and column cells.

The secondary lines are used to separate items of same nature. In the Calendar the secondary lines are shown between month and week view column cells.

The line colours may be defined in the Colours section.



Primary lines



Secondary lines



Using Colour tool (page 27) Colour section (page 79)

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Event colours

End users can save Calendar notes with different synchronization attribute. Items may be labelled as:

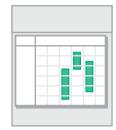
- private
- public
- not synchronized
- mixed

The private, public, and not synchronized items have specific colours when shown in the week view. Overlapping events are shown with a specific colour. This colour is used to indicate any event in a focused month view.

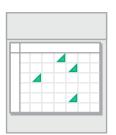
Mixed mode is used when you have more than one different types of appointments (public, private) at the same day.

You can change the indication colours. Additionally, you may modify the colour that is used to draw the items in the unfocused month view.

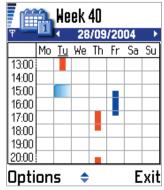
The colours may be changed in the Colours section.



Event indicators in week view



Event indicators in month view



Week	view
VVCCA	VICVV



Month view

See also:
Using Colour tool (page 27)
Colour section (page 79)

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Settings

Settings items have two states:

- list state
- edit state

In a list state, setting items are scrolled and the currently selected option value is shown below the item heading.

You can alter the appearance of the value item background.

When a list item is opened for editing, the main pane is shown with only one settings item. End users are able to edit the setting value once the item is opened.

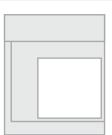
Settings values may be edited through:

- keying in a new item
- entering time, date or code values
- selecting a value from a list
- modifying a generic slider value
- modifying a volume slider

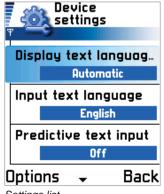
The general background for the opened item is that of the general list highlight.



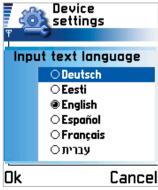
Settings list (list state)



Edited settings item (edit state)



Settings list



Edited settings item

See also: List highlights (page 48)

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Alphanumeric entry

When the value item is an end user defined text, the currently used entry is shown highlighted for copying inside the general input highlight graphics, which can be themed.

Time, date and code entry

Time, date and code entries are shown with the general input frame.

Option item list

End users may select a value from a list. The list may contain two or more items. If there are more than six items, the list scrolls.

You can alter the look of the list background and the highlight. The highlight graphics are the same as those defined for the value item background in the settings list.



Alphanumeric entry



Time/date/code entry



Option item list



Theme 'Surfer'



Theme 'Grind II'



Settings options list background (page 78)

Slider graphics (page 60) Input highlight (page 49)

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Slider

Slider is used to adjust various values. The slider field can contain currently selected value, minimum or maximum values and/or a slider.

You can alter the slider marker.

The slider items are shown on top of option area background graphics.

Volume slider

Volume value is shown on top of the option item background.

You can alter both the volume and background graphics.



Slider



Ringing volume

Ok Cance

Meeting

Theme 'Surfer'



Theme 'Grind II'



When the device contrast is adjusted there is an example image shown in the settings area.



See also:

Volume level graphics (page 58) Settings options list background (page 78)

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Focused option item indication

The focused option item indication is used in two cases:

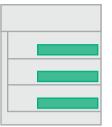
- as a background for the selected option in the settings list
- as a highlight in the option item list

The item structure is the same as with highlights and pop-ups. The parts used are:

- four corner bitmaps
- four sides bitmaps
- center bitmap

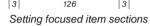
You can design the corner bitmaps individually. The side bitmaps can be tiled or contain full sized bitmaps. The center can be tiled or contain maximum area graphics.

When the item is used as a highlight, only prefixed sections of the item are shown.



Focused item in Settings list







Focused item in Edited settings item



Sections in Edited settings item

See also:

List highlight (page 48) Volume graphics (page 58) Slider graphics (page 60)

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Option area background graphics

The option area graphics are shown as a background for edited settings. The background is shown with:

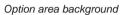
- option item list
- slider
- volume

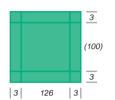
The item structure is the same as with highlights and pop-ups. The parts are:

- four corner bitmaps
- four side bitmaps
- center bitmap

You can design the corner bitmaps individually. The sides can be tiled or contain full sized bitmaps. The center can be tiled or be the maximum size of the graphics area.







Setting option area sections (maximum value)

List highlight (page 48) Volume graphics (page 58) Slider graphics (page 60)

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Colours

The colours section contains options to adjust item colours:

- icon colours
- text colours
- line colours
- · calendar event colours

Icon colours

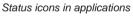
You can change the icon colours collectively for some of the icons used in the UI:

- general status icons in applications
- general status icons in the Idle mode
- navipane icons
- active/passive icons used in the tabs

Status icons are shown in the status area of applications. The background for the indicators is the status area background (if defined) or the general screen background.

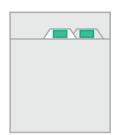
Phone status icons are shown in the top left corner of the main area. The icons are placed on top of a white gradient bitmap to ensure good legibility. This is done because end users can select their own wallpaper for the Idle mode, and an icon colour based on the theme background may not be visible.







Status icons in the Idle mode



Active/passive tab icons







Theme 'Surfer'



Theme 'Grind II'

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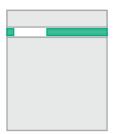
Other dialogs

Navipane icons are shown on top of the solid navipane background, if available.

The icons are used in different states to indicate list types, signal and battery, navigation arrows, editing mode, and so on.

You can define specific colours for the items shown on active and passive tabs. The same colour is used for both the texts and icons shown in the tabs.

You can change the colours by selecting the icon component and adjusting the colour values with the Colour tool.



Navipane icons



Status icons in applications



Navipane icons



Status icons in Idle state







Theme 'Grind II'



The navipane icon colour is always the same as the navipane text colour.



See also:

Using the Colour tool (page 27) General screen background (page 37) Status area background (page 38) Tab graphics (page 53) Idle mode background (page 65)

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Text colours

You can change the text colours collectively for some of the text items in the UI:

- title text
- navipane text
- active/passive text used in the tabs
- softkey texts
- calendar passive month numbers

The title text is shown in the status area. The title indicates either the application name or the main pane content.

Navipane text may be used for different purposes, for example, to give short information or to indicate the text message length.

The text colour value is the same that is used to render the navipane icons.

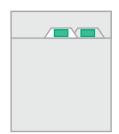
You can select the active/passive tab text colours. The colours are the same that are used for the active/passive tab icons. These colours are defined in Icon colour section.



Title text



Navipane text



Active/passive tab texts



Title text



Navipane text



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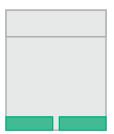
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The colour of the softkey texts may be theme dependent. The texts are shown in the control pane theme background, the Idle mode background, and in a control pane background defined for pop-up windows. The same colour value is used in all three cases.

You can adjust the colour that is used to display the day numbers of the unfocused month in the Calendar month view.

You can change the colours by selecting the icon component and adjusting the colour values with the Colour tool.



Selection key texts



Calendar passive month text



Using the Colour tool (page 27) General screen background (page 37) Control area background (page 43) Lower screen area background for pop-up windows (page 51) Idle mode background (page 65)



Selection key texts

September 29/09/2004								
	Мо	Tu	We	Th	Fr	Sa	Su	
36(30	31	1,	2	3	4	5,	
37)6	7	8	9	10	11	12	
38	13	14	15	16	17	18	19,	
39			22		24	25	26	
40	27	28	29	30	1,	2	3	
41	4	5	6	7	8	9	10	
Options Exit								

Calendar passive month text

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Line colours

You can change the line colours collectively for some of the items in the UI:

- primary line colour
- secondary line colour

Primary lines are used to separate items of a different type. For example, in the Calendar month view there are lines between week and day numbers.

The default colour of the primary lines is black.

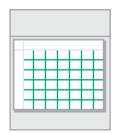
Secondary lines are used to separate items of the same type and to give structure. For example, in the Calendar week view there are lines between weekdays and hours.

The default colour of the secondary lines is grey.

You can change the colours by selecting first the line component and then adjusting the colour values with the Colour tool.



Primary lines



Secondary lines



Primary lines



Secondary lines

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Calendar event colours

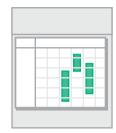
The end user can save calendar notes with different synchronisation attributes.

The items may be labeled as:

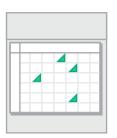
- private
- public
- none

The private and public items have specific colours used when shown in the week and month views. Items with no synchronisation value and overlapping events are also shown with specific colours.

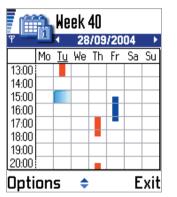
You can change the event colours as well as modify the colour used in the unfocused month view. To change colours, select the event component and adjust the colour values with the Colour tool.



Event indicators in week view



Event indicators in month view





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Sounds

There are two types of sounds:

- ringing tones
- message alerts

The ringing tones are used with incoming calls and the message alerts are used when messages are received. The format of the supported sounds depend on the device. Generally supported sound formats are: WAV and MP3.

You can modify sounds with the preferred sound application by double-clicking the sound icon.

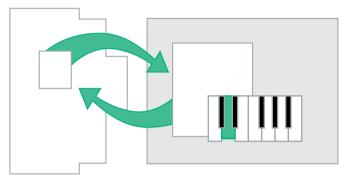
You can listen to the added sound at the preview while zooming the related preview image.





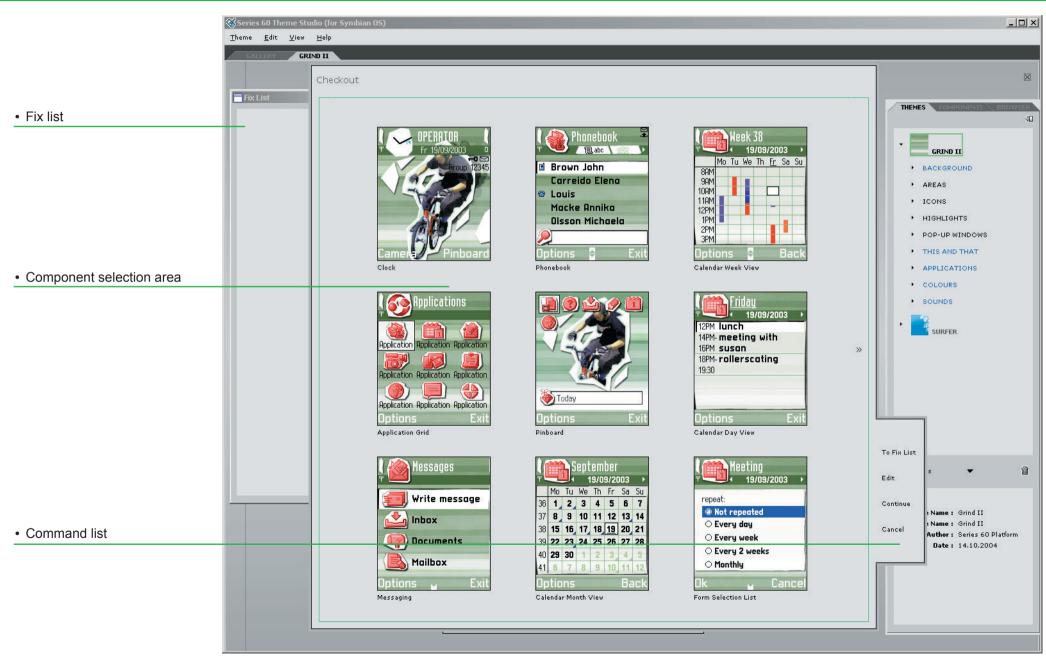


Device specific format



Editing in sound application

Checkout view



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Checkout

You can verify the theme output in the Checkout section.

The output verification is done in three steps:

- 1. theme component verification
- 2. component fixing
- 3. SIS file creation

Theme sample screens are shown in a pop-up window. You can scroll in the grid using the left and right arrows on the window.

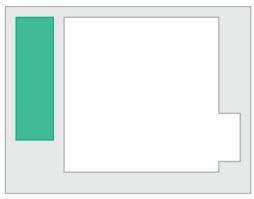
If you want to re-edit the designs, you can mark components in the images. Click the component you want to edit and then select the To Fix list command in the command list or if you wish to edit the component at once select the Edit command.

Selected items are shown in the Fix list. You can return to the editor by selecting the Edit command from the list. The sample screen window is closed and the first component in the fix list is opened for editing.

You can edit the theme component and remove the item from the fix list by saving the new design.

As corrections are made you can return to check the output by selecting the Checkout section again.

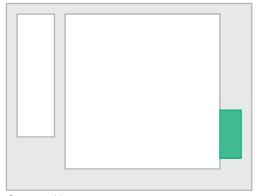
You can proceed with the theme output by selecting the Continue command. The settings dialog for the SIS file output is opened.



Fix list



Component selection area



Command bar



You can repeat the sample screen evaluation and component editing as many times as necessary.

You can edit the items in the fix list at any order by double-clicking the list items. The item component is shown in the Editing area.

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The dialog contains the information that was entered during theme creation. You can adjust the following settings:

- theme name
- SIS file name
- author name
- copyright statement
- copy protection
- screen saver used
- components used
- advanced settings

Theme name - this name will be shown in the mobile device. The default value is the name you specified in the Create new theme dialog.

SIS file name - This name may differ from the theme name.

Author name - By default, this is the same as the program owner or the name specified in the Create new theme dialog.

Copyright statement - You can enter a copyright statement for the theme.

Copy protection - You can either allow copying or prevent the theme from being copied between the mobile phone memory and memory card.

Screen saver - a Symbian OS DLL file (within a SIS file) may be included in the theme SIS file. The file may be browsed from the computer or network directory. You need to enter also a UID number for the screen saver.

Components - You can select the components used in the theme output. The SIS file may contain all or a subset of the components of the theme design file.

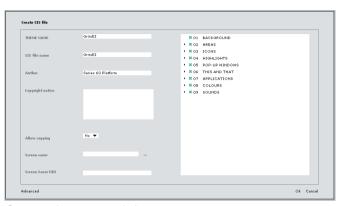


UID number:

Unique identifier number obtained from Symbian Ltd.



Create New Theme dialog (page 35)



Output options pop-up window

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Advanced settings

Advanced settings contain:

- public key file
- private key file (certificate key file)
- DRM protection

Symbian installation (SIS) file can be signed to verify the identity of the sender and to verify that the file hasn't been tampered with since it was signed. The digital signing process requires a private key and a public key certificates, which must previously have been created using the Certificate Generator.

The Certificate Generator (makekeys.exe) was installed to 'bin' directory during Theme Studio installation.

Support for Digital Rights Management (DRM) protected theme packages enables the user to create PIP packages. PIP packages can be DRM protected using corresponding tools and servers.



Advanced settings pop-up window

Theme Studio

DRM enabled Theme package is created by Theme Studio application

Download server

Usage constraints and DRM specific delivery formats are defined and stored to the WEB portal by the service provider

Series 60 device

The protected theme package is downloaded and installed to Series 60 terminal



Creating private and public keys (Appendix A, page 92)

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Properties

Rubbish bin

Third party icons

Other dialogs

Other dialogs in Theme Studio are:

- properties dialog
- rubbish bin dialog
- third party icons dialog

Properties dialog

To open the Properties dialog, select Properties from the Theme pull down menu.

Directories

You can view the application installation directory path and the item editing applications that are used when you double-click images or sounds in the Editing area.

The values for these are set during program installation. To change the values, select the Browse command.

Settings

You can select the background colour of Theme Studio: no colour, white, light grey or dark grey.

You can select if you want to delete files from the rubbish bin upon exiting the program. The choices are: Delete files upon exiting, Do not delete files, and Confirm before deleting files.

Rubbish bin

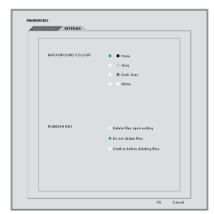
To open the Rubbish bin dialog, click the rubbish bin icon in the browser toolbar.

In the rubbish bin dialog, you have the following options:

- To restore a deleted item, click the item and select Restore from the File
- To delete all the files from the rubbish bin, select Empty Rubbish Bin from the File menu.
- To delete a single item from the rubbish bin, click the item and select Delete from the File menu.



Properties dialog directories view



Properties dialog settings view

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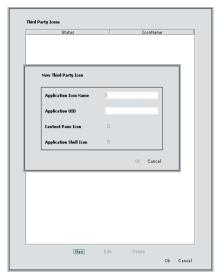
Third Party icons

Support for third party application icon skinning enables customization of third party application icons in case Application's Unique Identification Number (UID) is known. See Symbian Developer Library for more information about the UIDs (http://www.symbian.com).

To open the third party icons dialog, select the item from the Theme pull down menu. From the first window you can see the information of the applied third party icons. Information includes status of the icons and the icon names.

You can add new third party icon by clicking New command from the Command bar. For adding a new icon you will need the Application's Unique Identification Number (UID). The information requested is:

- application icon name
- application UID
- icon type (application shell or context pane icon)



Third party icon dialog with new icon entry window



More information?

Select keyboard shortcut F1 to access the context sensitive help.

Appendix A - Creating private and public keys

NOTE: PASSWORD IS NOT SUPPORTED

1. HOW TO DIGITALLY SIGN AN INSTALLATION FILE

- 1.Create a private key and a self signed certificate using the Certificate Generator — see How to create a private key and self signed certificate Subchapter. If verification of the sender's identity is not important, then skip to step 4.
- 2.Create a certificate request using the Certificate Generator, specifying the private key and self-signed certificate created in step 1 see appropriate "How to" topic.
- 3. Send the certificate request to the Certificate Authority, and get back the authenticated digital certificate.
- 4. Specify the private key used to create the digital signature, and the public key certificate to be used to decrypt it. For secure installation this should be an authenticated digital certificate, however the self-signed certificate may be used.

1.1 How to create a private key and self signed certificate

The Certification Generator is a PC based command line tool which creates a private/public key pair and issues certificate requests. The resultant private key is used to digitally sign installation files, enabling the install system to authenticate them. It carries out the following tasks:

- · Creation of a private/public key pair, where the public key is in the form of a self signed certificate.
- · Construction of a certificate request.
- · Optional viewing of certificate details.

1.2 Command line syntax

1.2.1 Create a private key and self signed certificate

makekeys -cert [-v] [-len key-length] [-password password] -dname distinguished-name-string private-key-file public-key-cert

For example:

makekeys -cert -dname "CN=Symbian OU=Development OR=SymbianLtd CO=GB" mykey.key mycert.cer

1.2.1.1 Note:

The Certification Generator uses a mouse input mechanism to generate the private key. The MSDOS property QuickEdit must be turned off in order for sampling of random data from the mouse to work.

1.2.2 Create a certificate request given a self-signed certificate

makekeys – req [-v][-password password] -dname distinguished-name-string private-key-file public-key-cert cert-request-file

For example:

makekeys req -dname "CN=Symbian OU=Development OR=SymbianLtd CO=GB" mykey.key mycert.cer myreq.p10

It is then up to the developer to send the certificate request to be signed by a trusted third party, i.e. a Certificate Authority. The CA uses various means to establish that the originator of the certificate request is who they claim to be. The developer's public key is signed by the CA, using the CA's private key, creating a certificate, which is then sent back to the applicant. The CA may return a single certificate, or a file containing a chain of certificates.

It is important that certificates returned by CA's are in the base64 encoded ASCII format. The Certification Generator generates base 64 encoded certificate files and expects certificates which come back from a CA to be in the same format. The CA may return a file containing a certificate chain. These are supported, and are needed if intermediate certificates are required between the CA's root certificate on the Symbian OS device and the developer certificate.

1.2.3 View certificate details

makekeys - view public-key-cert

Displays details of a certificate or certificate chain file. The -view command should be used with an existing certificate file (which should be in base 64 encoded format).

For example:

makekeys - view mycert.cer

1.2.4 Arguments

- -cert Create the private key (private-key-file) and self signed certificate (public-key-cert). If the private key file already exists it will be used to create the self signed certificate.
- -req Create a certificate request.
- -view View certificate details.
- -v Verbose mode displays additional diagnostic information.
- -dname distinguished-name-string

The distinguished-name-string specifies the distinguished name parameters required for the self-signed public key certificate file. This command line option should be constructed of a string of white space separated key/value pairs as follows:

CN=common name

OU=organisational unit

OR=organisation

LO=locality

ST=state

CO=country

EM=e-mail address

-password password

Password (optional). After creation, the password must be supplied to subsequently use the private key.

-len key-length

The key-length. The minimum is 512, maximum is 4096. The key length defaults to 1024.

-private-key-file

The file containing the private key. The private key should kept secret by the developer, whereas the public key is usually made generally available. Has a .key extension.

-public-key-cert

A self-signed certificate containing the public key. Has a .cer extension.

-cert-request-file

A self-contained file which is sent to the CA. The Certification Generator will create this file given a private and public key. It is then up to the developer to send the file to the CA and arrange for the application for the