zone

keys:	**[from]**	*<number>*	source picture
	[to]	*<number>*	destination picture
options:	**binary/label**		treat source picture as binary or labelled image
	fg		label foreground regions of binary source image
	bg		label background regions of binary source image
	circle/diamond/square/octagon		use Euclidean, 4-connected, 8-connected or octagonal metric for measuring distances

You use the **zone** command to generate the zones of influence associated with the source image. Each pixel in the output image is assigned the label of the nearest labelled pixel in the source image. By default, the source picture is treated as a binary image, and a labelled image is obtained from it (see the **label** command for details about the labelling process). If the **label** option is set, the source image is treated as being already labelled. Distances between pixels are measured, by default, using the true Euclidean metric. Faster and possibly acceptable results can be obtained with simpler metrics by specifying one of the options **diamond, square** or **octagon** (see the **dt** command to find out more about distance transforms and metrics).

Examples

```
zone
```

This command replaces the binary image in the current picture with the zones of influence associated with the connected foreground regions of the binary image.

```
zone 1 2 label diamond
```

This command outputs to picture 2 the zones of influence associated with the labelled regions in picture 1 using the 4-connected, *city block* metric.

Description

If the source picture is treated as a binary image (the default), a labelled image is obtained from it in exactly the same way as the **label** command. By default, the foreground regions are labelled. You can use the options **fg** and **bg** to control whether the foreground and/or background regions are labelled. Note that foreground regions are treated as being 8-connected, while background regions are 4-connected.

zone

By specifying the **label** option, you can surpress the labelling pass. This allows you to supply source images which have already been labelled, including images generated by any of the classification commands (**box, mindistance** and **likelihood**). Note that differently labelled regions are allowed to touch each other.

Each pixel in the output picture is assigned the label of the nearest labelled pixel. If more than one region is equidistant from a given pixel, the pixel is not labelled (set to zero).

Distances between pixels are calculated using one of several possible metrics. By default, the exact Euclidean metric is used. A simpler metric requiring less computation, can be selected with one of the options **diamond**, **square** or **octagon**. For more details about the different metrics and distance transforms, consult the documentation for the **dt** command.

Notes

see also: **dt, label, box, mindistance, likelihoood**

Defaults and Ranges

keys/options	defaults	range
[from]	current picture, held in the variable *select*	valid picture number
[to]	source picture	valid picture number
binary/label	treat source picture as a binary image	
fg/bg	label foreground regions	
circle/diamond/ square/octagon	use the Euclidean metric	