










Part 2 – Tools of the Trade

Here I recap and/or detail all the CC3 (and XP additional) commands I frequently use while doing dungeon maps.

Basic Drawing Tools

The most elementary drawing commands:




Name	Icon	Kbd*	Required input	Application	Notes
Line		LINE	2 points	Close a wall, redraw erased parts, draw construction lines	<ul style="list-style-type: none"> • Supports modifiers, • you can draw many connected lines though the result won't be a path... • Right-click to end
Arc		ARCB	3 points: #1-2: endpoints #3: point on arc	Approximate intersection of cones, cylinders...	<ul style="list-style-type: none"> • Supports modifiers. • Right-click to abort
Arc, Center Start and End	 + RC**	ARCS	3 points: #1: center #2-3: endpoints	Draw walls around spiral stairs, curved walls	<ul style="list-style-type: none"> • Supports modifiers • Always counter-clockwise • Right-click to abort
Circle		CIRP	2 points: #1: center #2: point on circle	Draw pillars, walls	<ul style="list-style-type: none"> • Supports modifiers • Right-click to abort
Polygon		POLY	All nodes	Draw walls, floors	<ul style="list-style-type: none"> • Supports modifiers • Right-click to end
Smooth Poly		SPOLY2	All nodes	Draw patches on ground or floor	<ul style="list-style-type: none"> • Supports modifiers • Ctrl+F to toggle frames on/off • Right-click to end
Text		TEXT	String to display Location (point)	Make quick notes, labeling, legend	<ul style="list-style-type: none"> • Supports modifiers • Optional font control • Right-click to abort

* Kbd = keyboard shortcut or command to type.

** +RC = Right-click on icon and select in the drop-down menu.

Modifiers

They are quite handy to precisely place points when required. You must first select a drawing or information tool that supports modifiers.

Name	Icon	Kbd	Required input	Application	Notes
Endpoint		F5	Entity (line, arc, side of poly...)	Place/select at the end of an entity	<ul style="list-style-type: none"> • Right-click to abort modifier, not command
Midpoint		F3	Entity (line, arc or side)	Place at/select the middle of an entity	<ul style="list-style-type: none"> • Right-click to abort modifier, not command
Center		F4	Entity(polygon, circle, arc)	Place at/select the center of an entity	<ul style="list-style-type: none"> • Right-click to abort modifier, not command





Name	Icon	Kbd	Required input	Application	Notes
Intersection		F6	2 entities or click on an intersection	Place/select intersection of two entities	<ul style="list-style-type: none"> • Right-click to abort modifier, not command
Point on		F9	Entity	Place/select nearest point on the entity	<ul style="list-style-type: none"> • Right-click to abort modifier, not command
Perpendicular		F12	Entity or side	Go perpendicular to the entity, side. For arcs, it means perpendicular to the tangent at that point	<ul style="list-style-type: none"> • Right-click to abort modifier, not command • You still need to select a point to specify the distance
Parallel	none	F11	Entity or side	Go parallel to the entity, side. For arcs, it means along the tangent at that point	<ul style="list-style-type: none"> • Right-click to abort modifier, not command • You still need to select a point to specify the distance

Converters

Use those tools to convert an entity(ies) in another kind of entity(ies), most commonly to convert connecting lines into a polygon or reverse.

Name	Icon	Keyboard	Required input	Application	Notes
MultiPoly		MPOLY2	Connected lines, arcs, or paths, polygons, circle, other multipolys...	Close a bunch of connecting lines/arcs, create a hole in a closed entity	<ul style="list-style-type: none"> • You cannot node-edit a multipoly • Don't use to close a polygon made only of lines • Hit d to do it after selection • Right-click to do it, cancel or combine
Line To Path		LTP2	Lines, path	Turn a bunch of connecting lines into a path, or into a polygon if start and end match	<ul style="list-style-type: none"> • Use preferably to MultiPoly to get a closed polygon with only lines. • Turns an arc into lines • Hit d to do it after selection • Right-click to do it, cancel or combine
Path To Poly		CLOSEPATH	Path	Turn a path into a polygon, whether start and end match or not	<ul style="list-style-type: none"> • Use when Line To Path is not enough to close • Hit d to do it after selection • Right-click to do it, cancel or combine
Explode		EXPLODE	Path, poly, multipoly, group...	Convert any compound entity into its individual elements	<ul style="list-style-type: none"> • Hit d to do it after selection • Right-click to do it, cancel or combine
Tools→ Groups→ Group	none	GROUP	Entities	Make a bunch of entities behave like one for most commands	<ul style="list-style-type: none"> • If an entity contained in a group is on a frozen layer, this entity isn't frozen! • Hit d to do it after selection • Right-click to do it, cancel or combine













Transformations

A transformation is taking an entity and change it into the same kind of entity (a line to a line, a poly to a poly...) but with an altered shape, position and/or angle. Though a copy isn't theoretically a transformation, I've included this command and the copy-versions of the other ones.

Name	Icon	Keyboard	Required input	Application	Notes
Move		MOV	One or more entities, origin point and target point OR vector coordinates	Translate from one point to another or along a vector	<ul style="list-style-type: none"> • Hit d to do it after selection • Right-click to do it, cancel or combine
Copy		COPY	One or more entities, origin point and target point(s)	Same as Move, but leaves the original entities as they are.	<ul style="list-style-type: none"> • Hit d to do it after selection • You can copy the same entity(entity) as long as you wish • Right-click to abort
Rectangular Array	 +RC	REPEAT	One or more entities, origin point and target point	Copy the entities in a 2D x-y array (like onions on a field)	<ul style="list-style-type: none"> • Hit d to do it after selection • Right-click to do it, cancel or combine
Copy To Sheet	 +RC	COPYSH T	One or more entities, sheet selection.	Copy all the selected entities on a new sheet, with no transformation.	<ul style="list-style-type: none"> • Hit d to do it after selection • Right-click to do it, cancel or combine
Rotate	 / +RC	ROTATE	One or more entities, center, angle in degrees	Rotate the entities around the center	<ul style="list-style-type: none"> • Positive angles for counter-clockwise rotation, negative for clockwise rotation. • Hit d to do it after selection • Right-click to do it, cancel or combine
Rotated copy	 +RC / +RC	ROTCOPY	One or more entities, center, angle in degrees	Same as Rotate but leaves the original entities as they are.	<ul style="list-style-type: none"> • Positive angles for counter-clockwise rotation, negative for clockwise rotation. • Hit d to do it after selection • Right-click to do it, cancel or combine
Circular Array	 +RC	CARY	One or more entities, # of spokes, # of rings, center, origin, angle in degrees	Copy entities around a center and/or concentric rings	<ul style="list-style-type: none"> • Positive angles for counter-clockwise rotation, negative for clockwise rotation. • Hit d to do it after selection • Right-click to do it, cancel or combine, selects default values when available.
Mirror	 +RC	MIRROR	One or more entities, two points defining the mirror line.	Transform entities in their mirror versions	<ul style="list-style-type: none"> • Hit d to do it after selection • Right-click to do it, cancel or combine after selection • Right-click to abort through the mirror line definition










Name	Icon	Keyboard	Required input	Application	Notes
Mirrored copy	 +RC	MIRCPY	One or more entities, two points defining the mirror line.	Same as Mirror but leaves original entities as they are	<ul style="list-style-type: none"> • Hit d to do it after selection • Right-click to do it, cancel or combine after selection • Right-click to abort through the mirror line definition
Scale	 /  +RC	SCALE	One or more entities, scale factor, center	Reduce (scale factor < 1) or enlarge (>1) entities	<ul style="list-style-type: none"> • Hit d to do it after selection • Right-click to do it, cancel or combine after selection • Right-click to accept default value when asked for the scale factor. • Right-click to abort when asked for center.
Scales copies	 +RC /  +RC	SCLCPY	Same as Scale	Same as Scale but leaves the original entities as they are	Same as Scale
Trim To Entity		TRIMTO	An entity to trim to, as many entities as you wish to trim	Shorten or lengthen the next entities to reach the first one	<ul style="list-style-type: none"> • Clicking on no entity will abort the command and you'll need to start again • Tricky when trimming to polygons or fractals, often only works if the entity to trim crosses the entity to trim to. • When trimming to circle or arcs, trims to the nearest point on the circle even if you trim to an arc.
Trim to Intersection		TRIMINT	Two entities, selected on the parts you want to keep (see notes for exception to this rule)	Trim each entity to the other one	<ul style="list-style-type: none"> • Right-click to abort • Tricky with arcs, usually keeps the longest part, often the unwanted part! The solution is to split the arc so the longest part <i>is</i> the part you want to keep. Sometimes you also have to select the arc on the part you want to remove instead of the part you want to keep
Split		SPLIT	One entity, split point.	Split the entity in two entities at the selected point	<ul style="list-style-type: none"> • Right-click to abort • No visual effect until you do something with one or both parts • Splitting a circle turns it into a 360° arc (single entity)
Break		BREAK	One entity, two points.	Create a gap in an entity	<ul style="list-style-type: none"> • Right-click to abort • if the entity is closed, select the entity on the part to keep










Cartographer Annual 46 Commands

I designed these commands to speed up mapping. They will be detailed in parts 3, 4 and 5.

Name	Icon	Kbd	Required input	Application	Notes
Double Line		DBLL	Width between the two lines, at least two points	Create one or more connected double lines evenly spaced, usually to create walls	<ul style="list-style-type: none"> • Right-click to accept default line width when asked for it • Right-click to end on point selection • if you click on an existing line, arc or circle, this entity is automatically broken to connect the new double line. If it isn't the first point, the command ends • you get individual lines, no path, no polygon • The points you select define the wall axis, neither the inner nor the outer line.
Double Line, Closed		DBLP	Same as Double Line	Same as Double Line, connecting the start to the end	<ul style="list-style-type: none"> • Same as Double Line. • you also get individual lines, no polygons though it looks like it, because the tools expects further line work (doors etc)
Double Arc		DBLA	Width between arcs, first point, last point, point on arc	Create two concentric and evenly spaced arcs	<ul style="list-style-type: none"> • Right-click to accept default line width when asked for it • Right-click to end on point selection • The arcs are drawn counter-clockwise • If start or end point are on a line, arc or circle, the tool automatically breaks this entity to connect the arc
Double Circle		DBLC	Width between circles, center and point on circle	Creates two concentric circles	<ul style="list-style-type: none"> • Right-click to accept default line width when asked for it • Right-click to abort on point selection
Alcove		BAL1	Width and depth of the alcove, a line, arc or circle entities on insertion point for every other alcove, a point defining the side to carve for each of those entities	Carve an alcove in a wall or make part of the wall to go out (fireplaces, pillars)	<ul style="list-style-type: none"> • Right-click on the icon to see many available options • Right-click to accept default values for width and depth • Right-click to abort at point selection • Right-click to end after last alcove • the width is kept in memory but the depth resets to half the width





Name	Icon	Kbd	Required input	Application	Notes
Door		DOR1	Inner and outer width of the door, first line, arc or circle entity at insertion point, second line, arc or circle entity anywhere on it.	Break both sides of a wall and insert an opening, optionally with door frame and columns	<ul style="list-style-type: none"> • Right-click on the icon to see many available options • Right-click to accept default values for both widths • You can specify the same value for both widths if you don't want to frame the opening • Right-click to abort at point selection • Right-click to end after last door • Values are kept in memory
Window		WIN1	Width and depth of alcove, # of separators, width of separators, inner wall entity on insertion point, outer wall entity anywhere on it	Break both sides of a wall to insert first an alcove then a windows with separators (mullions) or not	<ul style="list-style-type: none"> • Right-click on the icon to see many available options • Right-click to accept default values for numerals • You can specify 0 for the alcove depth to have the window occupy all the width between the entities • if you specify 0 separator, but a separator width greater than 0, half of this width will be applied on both jambs of the window • Right-click to abort at point selection • Right-click to end after last window • Values are kept in memory
Arrow slit		ASL1	Width and depth of alcove, inner width, outer width (usually very small), inner wall entity on insertion point, outer wall anywhere on it	Break both sides of a wall to insert an arrow slit	<ul style="list-style-type: none"> • Right-click on the icon to see many available options • Right-click to accept default values for numerals • You can specify 0 for the alcove depth to have the arrow slit occupy all the width between the entities • Right-click to abort at point selection • Right-click to end after last arrow slit • Values are kept in memory
Crenelations		CREN	Width of merlon (raised) and crenel (gap), optional arrow slit numerals, inner wall and outer wall entities	Replace a wall by the raised part of battlements	<ul style="list-style-type: none"> • Right-click to accept default values for numerals • Right-click to abort at entity selection • The wall disappears, copy it on another sheet to keep it
Stairs		STER	Going, step width, entity, # of steps	Draw stairs as lines	<ul style="list-style-type: none"> • Useful for line work only

