

# Section 1

## Installation

Building Quake Levels in 30 Minutes

Quake and Virtus Concepts

The logo for Virtus Deathmatch Maker is displayed in a stylized, metallic font. The word "VIRTUS" is in a smaller, sans-serif font to the left of a large, ornate letter "D". The words "DEATHMATCH" and "MAKER" are stacked to the right of the "D". The entire logo has a 3D, embossed appearance with shadows and highlights, set against a background of a grey, riveted metal plate.

VIRTUS DEATHMATCH  
MAKER

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## **INSTALLING DEATHMATCH MAKER**

### **SYSTEM REQUIREMENTS**

- Windows 95
- Intel Pentium processor
- 8 MB RAM (16+ MB recommended)
- 40 MB available on hard drive
- SVGA monitor in 256 colors
- CD-ROM drive
- Quake (registered version; Quake requires 80 MB of hard drive space)

### **HOW TO INSTALL**

Follow these steps to install your Deathmatch Maker application:

1. Insert the Deathmatch Maker CD-ROM into the CD-ROM drive.
2. Run setup.exe from the root directory of the CD-ROM.
3. Select the installation options in the dialog box. The default installation is the Deathmatch Maker application and all the contents.

As the program is installed, a progress meter shows the status of the installation.



VIRTUS **DEATHMATCH  
MAKER**

Building Quake Levels in 30 Minutes

## BUILDING A QUAKE LEVEL IN 30 MINUTES

In "Building a Quake Level in 30 Minutes," we show you how to drag and drop a template into the Design Window, drag and drop already-built objects into the template, change textures on a ceiling and a floor, export your new level to Quake, and play in Quake.

### INSTALL DEATHMATCH MAKER

If you haven't done so already, install Deathmatch Maker on your computer following the directions in "Welcome," just before the "Getting Started" section.

### OPEN DEATHMATCH MAKER

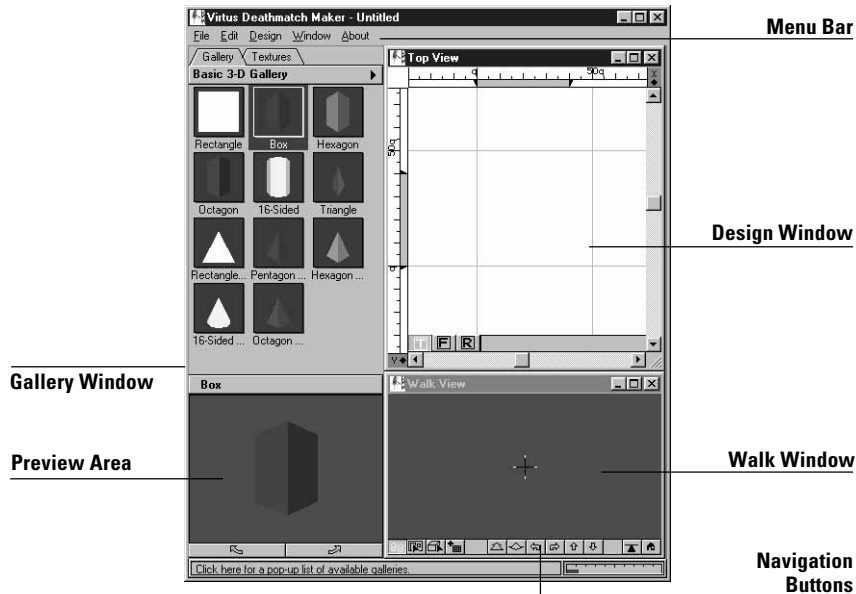
Once Deathmatch Maker is installed, open Deathmatch Maker. To do this, click on the Windows 95 Start button. Select the Programs folder, the Deathmatch Maker folder, and the Deathmatch Maker icon.

### SOME BASIC DEATHMATCH MAKER PARTS

Let's talk about some of the parts of the Deathmatch Maker Window first. To the left of the Deathmatch Maker Window is the Tools Pad. It holds tools you will use to work on objects.

Across the top of the Deathmatch Maker Window is the menu bar with File, Edit, Design, Window, and About.

Just below the menu bar and to the left is the Gallery Window. It has two tabs: Gallery and Textures. When you click on the Gallery tab, the Gallery View appears. When you click on the Textures tab, the Textures View appears.



Just below the menu bar and to the right is the Design Window. You'll create your level here. Below the Design Window is the Walk Window. In the Walk Window, you can see a three-dimensional view of your level and explore it as you build.

You'll notice a couple of things about the Design Window. At the lower-left of the Design Window are T, F, and R buttons. You can change your level to the Top, Front, or Right. The Top View is the default view. Use Top View for now. Rulers are at the top and left sides of the view and are in Quake units. Blue lines form a grid in the view. They help you to measure your space and place your objects within it.

You might need to use the Zoom-In and Zoom-Out tools in the Design Window to see all of the parts of a level. To use the Zoom-In and Zoom-Out tools, you need to first activate the Design Window. Select the Zoom-In Tool from the Tools Pad (it looks like a magnifying glass with a plus [+] sign) and then click in the Design Window so your level will zoom toward you, getting larger. Select the Zoom-Out Tool (it looks like a magnifying glass with a minus [-] sign) and then click in the Design Window so your level will zoom away from you, getting smaller.

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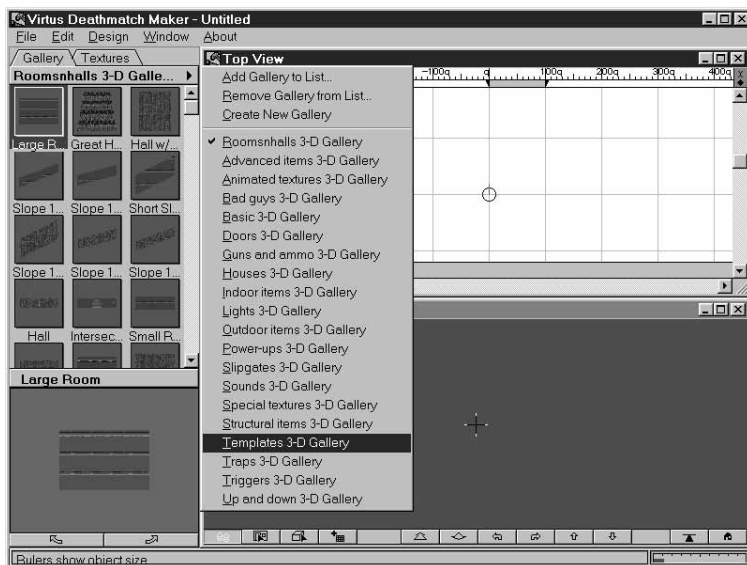
**Note:** When you use the Zoom-In and Zoom-Out tools to make objects bigger or smaller in the Design Window, you can lose sight of the part you need to work with. To prevent this from happening:

1. Select the object using the Select Object Tool.
  2. Use the Zoom-In and Zoom-Out tools. Selecting an object makes it stay in the center of the Design Window while you zoom in or out.
- 

At the right and at the bottom of the Design Window are scroll bars. Use them to scroll the view up, down, left, or right in the Design Window so you can see your level better.

### **DRAG & DROP A TEMPLATE ONTO THE DESIGN WINDOW**

We provide ready-made rooms and hallway templates so you can build hassle-free levels. We're going to use several in "Building a Quake Level in 30 Minutes." Select the Gallery tab. At the top of the Gallery Window is an arrow pointing to the right. This is called the galleries drop-down arrow. Click the left mouse button on the arrow. A list appears. The items in the list are galleries holding templates and objects for building levels. With the left mouse button, highlight and click on Templates 3-D Gallery. The objects from this gallery will be added to your Gallery View.



In the Gallery View, click on *Tutorial 1* to select it. If you want to get a better look at Tutorial 1, you can look at it in the Preview Area at the bottom of the Gallery Window. Two buttons just below the Preview Area will let you rotate any object selected from the Gallery Window. Press either the left or the right rotation button to preview the template. When you select any object in Gallery View with your mouse cursor, you can see it in the Preview Area.

Select Tutorial 1 in the Gallery View by clicking and holding down the left mouse button. While still holding down the left mouse button, drag the template object to the right, onto the Design Window's Top View. Release the mouse button in the middle of the Top View on the little circle (called the Observer). This action of selecting an object, moving it, and releasing the mouse button is called drag and drop. Drag and drop is one of the reasons Deathmatch Maker is so easy to use in building a Quake level.

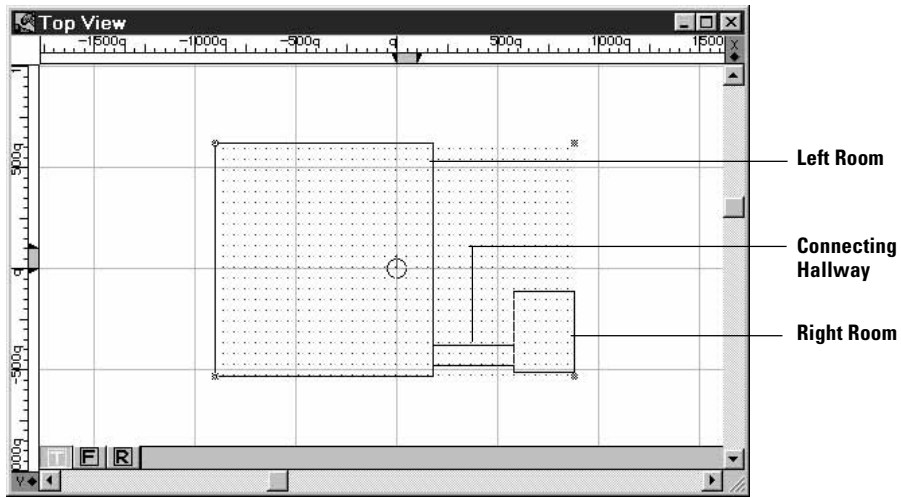
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**Note:** *Don't select the rooms or hallways in Tutorial 1 and move them around. The connections (or openings) between them will break. We discuss connections in "Going One Step Further."*

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Let's look at all of the parts of the Tutorial 1 template and give them names so they're easier to talk about without getting confused.

- Left Room: The room on the left.
- Right Room: The room on the right.
- Connecting Hallway: The hall connecting Left Room to Right Room.



The six middle buttons at the bottom of the Walk Window will help you to move the Observer around in the Design Window and walk through the template in the Walk Window. Of the six middle buttons, we'll use the four on the left, for now. Activate the Walk Window by clicking on it. Try clicking and holding either of the two middle buttons (they look like arrows bent in the middle). They turn the Observer left or right, much like the rotation arrows at the bottom of the Preview Area of the Gallery Window. Notice that you see what the Observer sees.

As we mentioned, the Observer (round circle) is located in the middle of the Design Window at coordinates 0,0. A line points from it out into the Top View. The direction this line is pointing in the Top View is the direction you can see within the Walk Window.



Try clicking and holding for a second or two the two buttons to the left of the turn buttons. Watch what the Observer does in the Design Window when you use the Navigation buttons in the Walk Window. Use the Navigation buttons to move the Observer into Hallway and to Right Room. Now return the Observer to the bottom of Left Room so it is looking into it.



## CHANGING TEXTURES

Make sure the Observer is in the Left Room so you can see changes in the room as we apply textures to its walls. Click on the Textures tab just like you clicked on the Gallery tab. The textures from the textures gallery appear in the Textures View. Try clicking on different textures and looking at their previews and descriptions in the Preview Area at the bottom of the Gallery Window.

Select the texture named *hall01*. It appears in the Preview Area along with its name. Return to the Textures View. Drag the texture from the Textures View into the Walk Window and release it when the mouse cursor is over one of Left Room's wall. This is called applying a texture. Drag the texture to the other walls to apply textures to them, too. You need to turn the Observer to see when you drop the texture on all the walls.

We want the ceilings to be one texture and floors to be another. Go to the Textures View again and select *space1\_2*. Drag it to the floor. Select *SMetal* and drag it to the ceiling. Now your room is textured much like the rest of Tutorial 1.

Use the four Navigation buttons to move the Observer around in the Walk Window and look at the walls, the ceiling, and the floor. Activate the Design Window and return to a good place to see the Left Room. Use the Zoom-Out Tool so you can see all of your level when you add bad guys, ammo, weapons, and health.

## ADD BAD GUYS, AMMO, WEAPONS, AND HEALTH

Select Gallery tab, select the galleries drop-down arrow, and select *Power-ups 3-D Gallery*. Nine power ups appear in the Gallery View. Select *Health* and drag it to the Design Window's Top View to the middle of Left Room. You can see it appear in the Walk Window.

Go to the Guns and ammo 3-D Gallery and select *Nailgun*. Place it in the center of Hallway.

Go to the Guns and ammo 3-D Gallery, select *Nails*, and place it in Left Room between Health and the corner.

Select *Grunt* from the Bad guys 3-D Gallery and place it in the middle of Right Room. Select *Rottweiler* and place one in Hallway near the entrance to Right Room.

Although bad guys, ammo, weapons, and health appear from the Top View to be within the side walls of Tutorial 1, they might be above the ceiling or below the floor. To see whether they're in the proper place in Tutorial 1, change from Top View to Front View. Notice the T, F, and R buttons on the bottom of the Design Window at the left. **T** is for Top (the view you have been using from the beginning), **F** is for Front, and **R** is for Right. Left-click **F** to change to Front View.

Bad guys, ammo, weapons, and health appear in the Design Window with boxes around them. These boxes are called bounding boxes. On sloping surfaces, you don't want to place the bounding box outside of the sloping surface. Keep the entire box contained inside the level.

You can move bad guys, ammo, weapons, and health objects. Just use drag and drop. Place your cursor (also called the Select Object Tool) in the middle of the object, hold down the left mouse, and move it. Release the mouse button when you are finished placing the object. Be careful to not place two objects too close together because you don't want them to overlap. Move them if necessary.

### BEFORE EXPORTING YOUR NEW LEVEL TO QUAKE

When you export your level to Quake, Quake places the player starting position at your last Observer position in Deathmatch Maker. **Be certain** that:

1. The Observer position is inside your level and not outside of it.
2. The Observer is not inside or too near a bad guy, a wall, an ammo box, and so forth.

Otherwise this position is where the Quake player appears when the game starts. Consider placing the Observer in the lower-center of Left Room so that the Quake player has time to explore before being attacked by Rottweiler or Grunt. Beware: If the Observer is left outside of your level, when you export to Quake and start Quake, the player will be outside of the Quake level and can't enter it. We'll talk later in "Building a Room from Scratch" about putting in a player start position.

### EXPORT YOUR NEW LEVEL TO QUAKE

Select *Quake Export* from the File menu. The Export Quake World dialog appears. Under Export Options select *Create BSP File*. Under Launch Options select *Launch Quake* when done. Click *OK*, and the Export Quake .map File dialog appears. Click *OK*. A dialog shows you the progress of the export. A warning or two pops up. Ignore them and click *OK* in the appropriate boxes.



The final dialog appears asking if you want to close Deathmatch Maker while you run Quake. Click *No*. Quake launches with your .map file and you can play your level. Be ready before you enter Hallway; bad guys are waiting. Close your copy of Quake before returning to Deathmatch Maker.

### TEST YOUR LEVEL IN QUAKE

If you don't like the way your level looks in Quake, open the file mylevel1.dmm in Deathmatch Maker and make adjustments. Close Quake before you return to Deathmatch Maker.

When you are finished, click *File* on the menu bar and the drop-down menu appears. Select *Close*. This closes the current Design Window so you can begin working on a new Quake level.



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Quake and Virtus Design Concepts

## QUAKE CONCEPTS

This section discusses three important concepts: Geometry, objects, and textures.

### GEOMETRY

A geometry is a 3-D shape used to create walls, define doors, and act as a placeholder for predefined objects. As a Quake level designer, you can create very complex or very simple levels. But remember that the complexity of an object and number of objects you place in a level affect the speed and performance when you work in Deathmatch Maker and when players try to use your game or level in Quake. Why? It simply takes a computer longer to draw more objects on a computer screen.

### OBJECTS

Objects in Deathmatch Maker are items such as weapons, ammunition, and health; architectural details such as arches and doors; and lights and torches—all found in Deathmatch Maker's 3-D galleries. Simply drag and drop objects from a gallery to design areas within the editor. Deathmatch Maker objects define the position, attributes, and behaviors for corresponding Quake objects. For instance, when you drag a rocket launcher into a room you created in the Deathmatch Maker Design Window, you are dragging a geometry placeholder into Deathmatch Maker that looks like a rocket launcher, but it will only function as a rocket launcher after you export it into Quake.

How do you ensure that your object behaves the way you want it to in Quake? Each object has properties. Right-click on an object in a Deathmatch Maker Design Window to display the Quake Object Properties dialog. The properties and behaviors you assign in this dialog are exported into Quake along with the object.

### TRIGGERS

A trigger causes another event to occur in Quake when the trigger is activated or touched. For instance, pressing a button might cause a door to open or a lift to move. Setting up a trigger requires that you first name the object that you want to have triggered, like a door. Then, you must assign that door's name to the Target attribute of the trigger, like a button. For example, if you create a door, you put a name like *door1* in its Object Name text box. Then, when you create the button that causes the door to open, enter *door1* in its Target text box. When the player touches the button, the door opens.

### SKILL LEVELS

When you create objects, you can set the Quake skill levels in which the object appears. You select beginner, intermediate, expert, or deathmatch level (or any combination) for the object to cause it to appear only in the specified skill level. That is, if you set a skill level of expert for a particular object, and a player is playing at an intermediate level, that object will not appear to that player.

## COMPLEX GEOMETRY

Some objects, such as doors, have settings that define their behavior as well as geometry that defines their shape. Creating a complex geometry and making it act like a door requires a series of steps: You must create the complex geometry, group it, and set its class to Door in the Quake Object Properties dialog.

## OBJECT TYPES

Objects in Deathmatch Maker are symbols. When you export your level, the Deathmatch Maker export engine reads the symbols and places the appropriate objects into the Quake level during export. If a Deathmatch Maker object is set to the class Geometry, it creates the correct geometry in Quake according to the size and shape of the object you created in Deathmatch Maker. If a Deathmatch Maker object is set to class Rockets, it creates an ammo box of rockets in the same location in Quake.

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***Note:** Defining an object's class in the Quake Object Properties dialog is more important than how it appears as you are creating your Quake level. If you make an object that looks like a simple rectangle but you set the class to Zombie, when the export engine reads the object, it will put a Zombie in place of the rectangle during export. In Quake, you'll see a Zombie, not a box.*

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We have provided objects in Deathmatch Maker that look like Quake objects. Using these objects during your level building gives you a good idea of what the level will look like in Quake. These Quake objects are provided by Deathmatch Maker and can be dragged and dropped into your level. Or you could use simple rectangles instead of Deathmatch Maker's textured objects and set their class labels to export different Quake objects. This could be useful if you want to speed up screen redraws while you're designing your level.

## CUSTOM OBJECTS

Advanced users can import custom objects into Deathmatch Maker. You must first write the Quake C code and create the appropriate structure for the object to behave inside Quake. Then you have to know how to apply that object as a patch to Quake. You can then create a graphic for the object in Deathmatch Maker and point to the Quake add-on or mod that you created.

## TEXTURES

Textures set a scene and establish the ambience of your level design. Quake requires a texture to be applied to every geometry. Some of the textures supplied with Deathmatch Maker include crenellated metal, rough-hewn wood, dead and weedy grass, sullen gray skies, nasty slime, and hot, fiery lava.

Three types of textures exist: Normal, animated, and liquid. Normal textures set the look and feel of a room, tunnel, waterway, concourse, canal, corridor, outdoor area, etc. Some normal textures include metal, wood, tapestry, tile, carpet, grass, asphalt, concrete, dirt, stone, plastic, gravel, etc. Animated textures create special visual effects and include blinking lights, buttons changing colors when activated by touch or shooting, undulating sky, etc.

Liquid textures, when applied to an object, give that geometry the properties of a liquid. When players see a liquid texture, such as water, it exhibits the appearance of water and behaves like water. Once players enter that texture, they are affected by it.

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**Note:** *Liquid textures have some quirks. Generally, if a liquid texture is applied to a geometry, the entire object remains solid. In other words, if water texture is applied to the top of a rectangle, the geometry is just a rectangle with a thin film of water on top. But, if the liquid texture is applied to the rest of the rectangle, all of the walls become like liquid. Quake players can pass through them and drown in the box. If you want one of the walls to act as a solid and not as a liquid, you must put a solid geometry against that surface to make it seem solid.*

*If you use animated textures, all of the subtextures must be included in the level. So, if you use an animated texture or a button, all of its subtextures must be included for the animation to work.* Virtus Design Concepts

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## CONTAINMENT

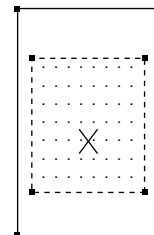
Containment provides some important benefits.

Every object in Deathmatch Maker knows which objects it contains and which object contains it. For example, if you move an object like a rectangle, all objects contained within it also move and retain their orientation to each other. If you delete an object, all objects contained within it are deleted.

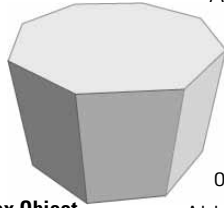
In Deathmatch Maker, containment is an all-or-none state; an object is either fully contained within another object or it is distinct from other objects. Objects cannot overlap (but they can be joined at a common surface). *Overlapping objects will not export correctly to Quake. Do not overlap 3-D objects!* While it is possible to draw overlapping objects, Deathmatch Maker does not warn you if you do this. Overlapping objects may not be drawn correctly, causing some background objects to appear in front of objects in the foreground within the Walk Window.

If you drag a small object into a larger object, a state of containment exists when the mouse pointer reaches the interior of the larger object. The program indicates containment by displaying small blocks ("containment markers") at the vertices of the containing object. These markers disappear when you release the mouse button. The illustration (right) shows containment markers displayed while a small object is being dragged into a larger object.

To move a room without its contained objects, hold down the Ctrl key, select the room, and drag it.



## CONVEX OBJECTS



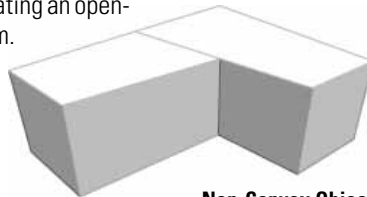
**Convex Object**

All objects created in Deathmatch Maker must be convex.

Convex is defined as "having a surface or boundary that curves or bulges outward, as the exterior of a sphere."

Virtus defines a convex object as an object whose polygonal outline can have a line drawn from any point on it to any other point on it without the line passing outside the outline boundary.

Although non-convex objects are not permitted, the appearance of a non-convex object can be achieved by creating more than one convex object, connecting these, and then creating an opening in the common wall between them.



**Non-Convex Object**

## VIRTUS RULES OF DRAWING

Every software package has rules and limitations. Following these rules will help you work efficiently while creating levels with Deathmatch Maker.

1. Do not overlap three-dimensional objects so that one object is partially contained in another.
2. Non-convex objects are not allowed. Objects that are non-convex should be created by connecting two or more convex objects.
3. Speed and detail are inversely proportional; you have to give up one for the other. The more complex your level, the slower your level will walk. Having a larger processor will increase the apparent speed of your model (that is, the faster you will "walk").
4. Transparent objects and surfaces drain processing power; use them sparingly.
5. Everything is an object in Deathmatch Maker. You cannot draw a line. All objects drawn have depth, even if they appear infinitely thin.