



# NVIDIA TensorRT

API Migration Guide | NVIDIA Docs

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# Chapter 1. Python

## 1.1. Python API Changes

Table 1. Allocating Buffers and Using a Name-Based Engine API

TensorRT 8.x	TensorRT 10.0
<pre>def allocate_buffers(self, engine):     """     Allocates all buffers required for     an engine, i.e. host/device inputs/     outputs.     """     inputs = []     outputs = []     bindings = []     stream = cuda.Stream()      # binding is the name of input/     output     for binding in engine:         size =     trt.volume(engine.get_binding_shape(binding)     * engine.max_batch_size         dtype =     trt.nptype(engine.get_binding_dtype(binding)          # Allocate host and device         buffers         host_mem =     cuda.pagelocked_empty(size, dtype)     # page-locked memory buffer (won't     swapped to disk)         device_mem =     cuda.mem_alloc(host_mem.nbytes)          # Append the device buffer         address to device bindings.         # When cast to int, it's a         linear index into the context's memory         (like memory address).         bindings.append(int(device_mem))</pre>	<pre>def allocate_buffers(self, engine):     """     Allocates all buffers required for     an engine, i.e. host/device inputs/     outputs.     """     inputs = []     outputs = []     bindings = []     stream = cuda.Stream()      for i in     range(engine.num_io_tensors):         tensor_name =     engine.get_tensor_name(i)         size =     trt.volume(engine.get_tensor_shape(tensor_name))         dtype =     trt.nptype(engine.get_tensor_dtype(tensor_name))          # Allocate host and device         buffers         host_mem =     cuda.pagelocked_empty(size, dtype)     # page-locked memory buffer (won't     swapped to disk)         device_mem =     cuda.mem_alloc(host_mem.nbytes)          # Append the device buffer         address to device bindings.         # When cast to int, it's a         linear index into the context's memory         (like memory address).         bindings.append(int(device_mem))          # Append to the appropriate         input/output list.</pre>

TensorRT 8.x	TensorRT 10.0
<pre># Append to the appropriate input/output list. if engine.binding_is_input(binding):  inputs.append(self.HostDeviceMem(host_mem, device_mem)) else:  outputs.append(self.HostDeviceMem(host_mem, device_mem))  return inputs, outputs, bindings, stream</pre>	<pre>if engine.get_tensor_mode(tensor_name) == trt.TensorIOMode.INPUT:  inputs.append(self.HostDeviceMem(host_mem, device_mem)) else:  outputs.append(self.HostDeviceMem(host_mem, device_mem))  return inputs, outputs, bindings, stream</pre>

Table 2. Transition from enqueueV2 to enqueueV3 for Python

TensorRT 8.x	TensorRT 10.0
<pre># Allocate device memory for inputs. d_inputs = [cuda.mem_alloc(input_nbytes) for binding in range(input_num)]  # Allocate device memory for outputs. h_output = cuda.pagelocked_empty(output_nbytes, dtype=np.float32) d_output = cuda.mem_alloc(h_output.nbytes)  # Transfer data from host to device. cuda.memcpy_htod_async(d_inputs[0], input_a, stream) cuda.memcpy_htod_async(d_inputs[1], input_b, stream) cuda.memcpy_htod_async(d_inputs[2], input_c, stream)  # Run inference context.execute_async_v2(bindings=[int(d_inputs[i]) for d_inp in d_inputs] + [int(d_output)]), stream_handle=stream.handle)  # Synchronize the stream stream.synchronize()</pre>	<pre># Allocate device memory for inputs. d_inputs = [cuda.mem_alloc(input_nbytes) for binding in range(input_num)]  # Allocate device memory for outputs. h_output = cuda.pagelocked_empty(output_nbytes, dtype=np.float32) d_output = cuda.mem_alloc(h_output.nbytes)  # Transfer data from host to device. cuda.memcpy_htod_async(d_inputs[0], input_a, stream) cuda.memcpy_htod_async(d_inputs[1], input_b, stream) cuda.memcpy_htod_async(d_inputs[2], input_c, stream)  # Setup tensor address bindings = [int(d_inputs[i]) for i in range(3)] + [int(d_output)]  for i in range(engine.num_io_tensors):  context.set_tensor_address(engine.get_tensor_name(i), bindings[i])  # Run inference context.execute_async_v3(stream_handle=stream.handle)  # Synchronize the stream stream.synchronize()</pre>

Table 3. Engine Building, use only build\_serialized\_network

TensorRT 8.x	TensorRT 10.0
<pre>engine_bytes = None try:</pre>	<pre>engine_bytes = self.builder.build_serialized_network(self.network, self.config)</pre>

TensorRT 8.x	TensorRT 10.0
<pre> engine_bytes = self.builder.build_serialized_network(self.network, self.config) except AttributeError: engine = self.builder.build_engine(self.network, self.config) engine_bytes = engine.serialize() del engine assert engine_bytes </pre>	<pre> if engine_bytes is None: log.error("Failed to create engine") sys.exit(1) </pre>

## 1.2. Added Python APIs

### Types

- ▶ APILanguage
- ▶ ExecutionContextAllocationStrategy
- ▶ IGpuAsyncAllocator
- ▶ InterfaceInfo
- ▶ IPluginResource
- ▶ IPluginV3
- ▶ IStreamReader
- ▶ IVersionedInterface

### Methods and Properties

- ▶ ICudaEngine.is\_debug\_tensor()
- ▶ ICudaEngine.minimum\_weight\_streaming\_budget
- ▶ ICudaEngine.streamable\_weights\_size
- ▶ ICudaEngine.weight\_streaming\_budget
- ▶ IExecutionContext.get\_debug\_listener()
- ▶ IExecutionContext.get\_debug\_state()
- ▶ IExecutionContext.set\_all\_tensors\_debug\_state()
- ▶ IExecutionContext.set\_debug\_listener()
- ▶ IExecutionContext.set\_tensor\_debug\_state()
- ▶ IExecutionContext.update\_device\_memory\_size\_for\_shapes()
- ▶ IGpuAllocator.allocate\_async()
- ▶ IGpuAllocator.deallocate\_async()
- ▶ INetworkDefinition.add\_plugin\_v3()
- ▶ INetworkDefinition.is\_debug\_tensor()

- ▶ `INetworkDefinition.mark_debug()`
- ▶ `INetworkDefinition.unmark_debug()`
- ▶ `IPluginRegistry.acquire_plugin_resource()`
- ▶ `IPluginRegistry.all_creators`
- ▶ `IPluginRegistry.deregister_creator()`
- ▶ `IPluginRegistry.get_creator()`
- ▶ `IPluginRegistry.register_creator()`
- ▶ `IPluginRegistry.release_plugin_resource()`

## 1.3. Removed Python APIs

Table 4. Removed Python APIs and their Suggested Superseded API

Python API	Superseded API
<code>BuilderFlag.ENABLE_TACTIC_HEURISTIC</code>	Builder optimization level 2
<code>BuilderFlag.STRICT_TYPES</code>	Use all three flags: <ol style="list-style-type: none"> <li>1. <code>BuilderFlag.DIRECT_IO</code></li> <li>2. <code>BuilderFlag.PREFER_PRECISION_CONSTRAINTS</code></li> <li>3. <code>BuilderFlag.REJECT_EMPTY_ALGORITHMS</code></li> </ol>
<ol style="list-style-type: none"> <li>1. <code>EngineCapability.DEFAULT</code></li> <li>2. <code>EngineCapability.kSAFE_DLA</code></li> <li>3. <code>EngineCapability.SAFE_GPU</code></li> </ol>	<ol style="list-style-type: none"> <li>1. <code>EngineCapability.STANDARD</code></li> <li>2. <code>EngineCapability.DLA_STANDALONE</code></li> <li>3. <code>EngineCapability.SAFETY</code></li> </ol>
<code>IAlgorithmIOInfo.tensor_format</code>	The strides, data type, and vectorization information is sufficient to uniquely identify tensor formats.
<code>IBuilder.max_batch_size</code>	Implicit batch is no longer supported.
<code>IBuilderConfig.max_workspace_size</code>	<ol style="list-style-type: none"> <li>1. <code>IBuilderConfig.set_memory_pool_limit()</code> with <code>MemoryPoolType.WORKSPACE</code></li> <li>2. <code>IBuilderConfig.get_memory_pool_limit()</code> with <code>MemoryPoolType.WORKSPACE</code></li> </ol>
<code>IBuilderConfig.min_timing_iterations</code>	<code>IBuilderConfig.avg_timing_iterations</code>
<ol style="list-style-type: none"> <li>1. <code>ICudaEngine.binding_is_input()</code></li> <li>2. <code>ICudaEngine.get_binding_bytes_per_component()</code></li> <li>3. <code>ICudaEngine.get_binding_components_per_element()</code></li> </ol>	<ol style="list-style-type: none"> <li>1. <code>ICudaEngine.get_tensor_mode()</code></li> <li>2. <code>ICudaEngine.get_tensor_bytes_per_component()</code></li> <li>3. <code>ICudaEngine.get_tensor_components_per_element()</code></li> </ol>

Python API	Superseded API
<ul style="list-style-type: none"> <li>4. ICudaEngine.get_binding_dtype()</li> <li>5. ICudaEngine.get_binding_format()</li> <li>6. ICudaEngine.get_binding_format_desc()</li> <li>7. ICudaEngine.get_binding_index()</li> <li>8. ICudaEngine.get_binding_name()</li> <li>9. ICudaEngine.get_binding_shape()</li> <li>10. ICudaEngine.get_binding_vectorized_dimensions()</li> <li>11. ICudaEngine.get_location()</li> <li>12. ICudaEngine.get_profile_shape()</li> <li>13. ICudaEngine.get_profile_shape_input()</li> <li>14. ICudaEngine.has_implicit_batch_dimension()</li> <li>15. ICudaEngine.is_execution_binding()</li> <li>16. ICudaEngine.is_shape_binding()</li> <li>17. ICudaEngine.max_batch_size()</li> <li>18. ICudaEngine.num_bindings()</li> </ul>	<ul style="list-style-type: none"> <li>4. ICudaEngine.get_tensor_dtype()</li> <li>5. ICudaEngine.get_tensor_format()</li> <li>6. ICudaEngine.get_tensor_format_desc()</li> <li>7. No name-based equivalent replacement</li> <li>8. No name-based equivalent replacement</li> <li>9. ICudaEngine.get_tensor_shape()</li> <li>10. ICudaEngine.get_tensor_vectorized_dimensions()</li> <li>11. ITensor.location</li> <li>12. ICudaEngine.get_tensor_profile_shape()</li> <li>13. ICudaEngine.get_tensor_profile_values()</li> <li>14. Implicit batch is no longer supported</li> <li>15. No name-based equivalent replacement</li> <li>16. ICudaEngine.is_shape_inference_io()</li> <li>17. Implicit batch is no longer supported</li> <li>18. ICudaEngine.num_io_tensors()</li> </ul>
<ul style="list-style-type: none"> <li>1. IExecutionContext.get_binding_shape()</li> <li>2. IExecutionContext.get_strides()</li> <li>3. IExecutionContext.set_binding_shape()</li> </ul>	<ul style="list-style-type: none"> <li>1. IExecutionContext.get_tensor_shape()</li> <li>2. IExecutionContext.get_tensor_strides()</li> <li>3. IExecutionContext.set_input_shape()</li> </ul>
IFullyConnectedLayer	IMatrixMultiplyLayer
<ul style="list-style-type: none"> <li>1. INetworkDefinition.add_convolution()</li> <li>2. INetworkDefinition.add_deconvolution()</li> <li>3. INetworkDefinition.add_fully_connected()</li> <li>4. INetworkDefinition.add_padding()</li> <li>5. INetworkDefinition.add_pooling()</li> <li>6. INetworkDefinition.add_rnn_v2()</li> <li>7. INetworkDefinition.has_explicit_precision</li> <li>8. INetworkDefinition.has_implicit_batch_dimension</li> </ul>	<ul style="list-style-type: none"> <li>1. INetworkDefinition.add_convolution_nd()</li> <li>2. INetworkDefinition.add_deconvolution_nd()</li> <li>3. INetworkDefinition.add_matrix_multiply()</li> <li>4. INetworkDefinition.add_padding_nd()</li> <li>5. INetworkDefinition.add_pooling_nd()</li> <li>6. INetworkDefinition.add_loop()</li> <li>7. Explicit precision support is removed in 10.0</li> <li>8. Implicit batch is no longer supported</li> </ul>
IRNNv2Layer	ILoop
<ul style="list-style-type: none"> <li>1. NetworkDefinitionCreationFlag.EXPLICIT_BATCH</li> <li>2. NetworkDefinitionCreationFlag.EXPLICIT_PRECISION</li> </ul>	<p>Support is removed in 10.0</p>
<ul style="list-style-type: none"> <li>1. PaddingMode.CAFFE_ROUND_DOWN</li> </ul>	<p>Caffe is not supported since 9.0</p>

Python API	Superseded API
2. <code>PaddingMode.CAFFE_ROUND_UP</code>	
1. <code>PreviewFeature.DISABLE_EXTERNAL_TACTICS_3005</code> 2. <code>PreviewFeature.FASTER_DYNAMIC_SHAPES_0805</code>	1. External tactics are always disabled for core code 2. This flag is on by default
1. <code>ProfilingVerbosity.DEFAULT</code> 2. <code>ProfilingVerbosity.VERBOSE</code>	1. <code>ProfilingVerbosity.LAYER_NAMES_ONLY</code> 2. <code>ProfilingVerbosity.DETAILED</code>
<code>ResizeMode</code>	Use <code>InterpolationMode</code> , alias is removed
<code>SampleMode.DEFAULT</code>	<code>SampleMode.STRICT_BOUNDS</code>
<code>SliceMode</code>	Use <code>SampleMode</code> , alias is removed



# Chapter 2. C++

## 2.1. C++ API Changes

Table 5. Transition from enqueueV2 to enqueueV3 for C++

TensorRT 8.x	TensorRT 10.0
<pre>// Create RAII buffer manager object. samplesCommon::BufferManager   buffers(mEngine);  auto context =   SampleUniquePtr&lt;nvinfer1::IExecutionContext&gt;::createExecutionContext(); if (!context) {   return false; }  // Pick a random digit to try to infer. srand(time(NULL)); int32_t const digit = rand() % 10;  // Read the input data into the managed   buffers. // There should be just 1 input tensor. ASSERT(mParams.inputTensorNames.size()   == 1);  if (!processInput(buffers,   mParams.inputTensorNames[0], digit)) {   return false; } // Create CUDA stream for the execution   of this inference. cudaStream_t stream; CHECK(cudaStreamCreate(&amp;stream));</pre>	<pre>// Create RAII buffer manager object. samplesCommon::BufferManager   buffers(mEngine);  auto context =   SampleUniquePtr&lt;nvinfer1::IExecutionContext&gt;(mEngine- &gt;createExecutionContext()); if (!context) {   return false; }  for (int32_t i = 0, e = mEngine- &gt;getNbIOTensors(); i &lt; e; i++) {   auto const name = mEngine- &gt;getIOTensorName(i);   context-&gt;setTensorAddress(name,   buffers.getDeviceBuffer(name)); }  // Pick a random digit to try to infer. srand(time(NULL)); int32_t const digit = rand() % 10;  // Read the input data into the managed   buffers. // There should be just 1 input tensor. ASSERT(mParams.inputTensorNames.size()   == 1);  if (!processInput(buffers,   mParams.inputTensorNames[0], digit)) {   return false; } // Create CUDA stream for the execution   of this inference.</pre>

TensorRT 8.x	TensorRT 10.0
<pre> // Asynchronously copy data from host input buffers to device input buffers buffers.copyInputToDeviceAsync(stream);  // Asynchronously enqueue the inference work  if (!context- &gt;enqueueV2(buffers.getDeviceBindings().data stream, nullptr)) {     return false; } // Asynchronously copy data from device output buffers to host output buffers. buffers.copyOutputToHostAsync(stream);  // Wait for the work in the stream to complete. CHECK(cudaStreamSynchronize(stream));  // Release stream. CHECK(cudaStreamDestroy(stream)); </pre>	<pre> cudaStream_t stream; CHECK(cudaStreamCreate(&amp;stream));  // Asynchronously copy data from host input buffers to device input buffers buffers.copyInputToDeviceAsync(stream);  // Asynchronously enqueue the inference workif (!context-&gt;enqueueV3(stream)) {     return false; } // Asynchronously copy data from device output buffers to host output buffers. buffers.copyOutputToHostAsync(stream);  // Wait for the work in the stream to complete. CHECK(cudaStreamSynchronize(stream));  // Release stream. CHECK(cudaStreamDestroy(stream)); </pre>

## 2.2. 64-Bit Dimension Changes

The dimensions held by Dims changed from `int32_t` to `int64_t`. However, in TensorRT 10.0, TensorRT will generally reject networks that use dimensions exceeding the range of `int32_t`. The tensor type returned by `IShapeLayer` is now `DataType::kINT64`. Use `ICastLayer` to cast the result to the tensor of type `DataType::kINT32` if 32-bit dimensions are required.

Inspect code that bitwise copies to and from Dims to ensure it is correct for `int64_t` dimensions.

## 2.3. Added C++ APIs

### Enums

- ▶ `ActivationType::kGELU_ERF`
- ▶ `ActivationType::kGELU_TANH`
- ▶ `BuilderFlag::kREFIT_IDENTICAL`
- ▶ `BuilderFlag::kSTRIP_PLAN`
- ▶ `BuilderFlag::kWEIGHT_STREAMING`
- ▶ `Datatype::kINT4`
- ▶ `LayerType::kPLUGIN_V3`

## Types

- ▶ `APILanguage`
- ▶ `Dims64`
- ▶ `ExecutionContextAllocationStrategy`
- ▶ `IGpuAsyncAllocator`
- ▶ `InterfaceInfo`
- ▶ `IPluginResource`
- ▶ `IPluginV3`
- ▶ `IStreamReader`
- ▶ `IVersionedInterface`


## Methods and Properties

- ▶ `getInferLibBuildVersion`
- ▶ `getInferLibMajorVersion`
- ▶ `getInferLibMinorVersion`
- ▶ `getInferLibPatchVersion`
- ▶ `ICudaEngine::createRefitter`
- ▶ `IcudaEngine::getMinimumWeightStreamingBudget`
- ▶ `IcudaEngine::getStreamableWeightsSize`
- ▶ `ICudaEngine::getWeightStreamingBudget`
- ▶ `IcudaEngine::isDebugTensor`
- ▶ `ICudaEngine::setWeightStreamingBudget`
- ▶ `IExecutionContext::getDebugListener`
- ▶ `IExecutionContext::getTensorDebugState`
- ▶ `IExecutionContext::setAllTensorsDebugState`
- ▶ `IExecutionContext::setDebugListener`
- ▶ `IExecutionContext::setOutputTensorAddress`
- ▶ `IExecutionContext::setTensorDebugState`
- ▶ `IExecutionContext::updateDeviceMemorySizeForShapes`
- ▶ `IGpuAllocator::allocateAsync`
- ▶ `IGpuAllocator::deallocateAsync`
- ▶ `INetworkDefinition::addPluginV3`
- ▶ `INetworkDefinition::isDebugTensor`
- ▶ `INetworkDefinition::markDebug`
- ▶ `INetworkDefinition::unmarkDebug`

- ▶ `IPluginRegistry::acquirePluginResource`
- ▶ `IPluginRegistry::deregisterCreator`
- ▶ `IPluginRegistry::getAllCreators`
- ▶ `IPluginRegistry::getCreator`
- ▶ `IPluginRegistry::registerCreator`
- ▶ `IPluginRegistry::releasePluginResource`

## 2.4. Removed C++ APIs

Table 6. Removed C++ APIs and their Suggested Superseded API

C++ API	Superseded API
<code>BuilderFlag::kENABLE_TACTIC_HEURISTIC</code>	Builder optimization level 2
<code>BuilderFlag::kSTRICT_TYPES</code>	Use for all three flags: <ol style="list-style-type: none"> <li>1. <code>kREJECT_EMPTY_ALGORITHMS</code></li> <li>2. <code>kDIRECT_IO</code></li> <li>3. <code>kPREFER_PRECISION_CONSTRAINTS</code></li> </ol> <div style="background-color: #f0f0f0; padding: 5px; margin-top: 10px;">  Note: When removing enum members (for all enums in this list) we will be changing enumeration in the enum to have sequential numbers.         </div>
<ol style="list-style-type: none"> <li>1. <code>EngineCapability::kDEFAULT</code></li> <li>2. <code>EngineCapability::kSAFE_DLA</code></li> <li>3. <code>EngineCapability::kSAFE_GPU</code></li> </ol>	<ol style="list-style-type: none"> <li>1. <code>EngineCapability::kSTANDARD</code></li> <li>2. <code>EngineCapability::kDLA_STANDALONE</code></li> <li>3. <code>EngineCapability::kSAFETY</code></li> </ol>
<code>IAlgorithm::getAlgorithmIOInfo()</code>	<code>IAlgorithm::getAlgorithmIOInfoByIndex()</code>
<code>IAlgorithmIOInfo::getTensorFormat()</code>	The strides, data type, and vectorization information is sufficient to uniquely identify tensor formats.
<ol style="list-style-type: none"> <li>1. <code>IBuilder::buildEngineWithConfig()</code></li> <li>2. <code>IBuilder::destroy()</code></li> <li>3. <code>IBuilder::getMaxBatchSize()</code></li> <li>4. <code>IBuilder::setMaxBatchSize()</code></li> </ol>	<ol style="list-style-type: none"> <li>1. <code>IBuilder::buildSerializedNetwork()</code></li> <li>2. <code>delete ObjectName</code></li> <li>3. Implicit batch is no longer supported</li> <li>4. Implicit batch is no longer supported</li> </ol>
<ol style="list-style-type: none"> <li>1. <code>IBuilderConfig::destroy()</code></li> </ol>	<ol style="list-style-type: none"> <li>1. <code>delete ObjectName</code></li> </ol>

C++ API	Superseded API
<ul style="list-style-type: none"> <li>2. <code>IBuilderConfig::getMaxWorkspaceSize()</code></li> <li>3. <code>IBuilderConfig::getMinTimingIterations()</code></li> <li>4. <code>IBuilderConfig::setMaxWorkspaceSize()</code></li> <li>5. <code>IBuilderConfig::setMinTimingIterations()</code></li> </ul>	<ul style="list-style-type: none"> <li>2. <code>IBuilderConfig::getMemoryPoolLimit()</code> with <code>MemoryPoolType::kWORKSPACE</code></li> <li>3. <code>IBuilderConfig::getAvgTimingIterations()</code></li> <li>4. <code>IBuilderConfig::setMemoryPoolLimit()</code> with <code>MemoryPoolType::kWORKSPACE</code></li> <li>5. <code>IBuilderConfig::setAvgTimingIterations()</code></li> </ul>
<ul style="list-style-type: none"> <li>1. <code>IConvolutionLayer::getDilation()</code></li> <li>2. <code>IConvolutionLayer::getKernelSize()</code></li> <li>3. <code>IConvolutionLayer::getPadding()</code></li> <li>4. <code>IConvolutionLayer::getStride()</code></li> <li>5. <code>IConvolutionLayer::setDilation()</code></li> <li>6. <code>IConvolutionLayer::setKernelSize()</code></li> <li>7. <code>IConvolutionLayer::setPadding()</code></li> <li>8. <code>IConvolutionLayer::setStride()</code></li> </ul>	<ul style="list-style-type: none"> <li>1. <code>IConvolutionLayer::getDilationNd()</code></li> <li>2. <code>IConvolutionLayer::getKernelSizeNd()</code></li> <li>3. <code>IConvolutionLayer::getPaddingNd()</code></li> <li>4. <code>IConvolutionLayer::getStrideNd()</code></li> <li>5. <code>IConvolutionLayer::setDilationNd()</code></li> <li>6. <code>IConvolutionLayer::setKernelSizeNd()</code></li> <li>7. <code>IConvolutionLayer::setPaddingNd()</code></li> <li>8. <code>IConvolutionLayer::setStrideNd()</code></li> </ul>
<ul style="list-style-type: none"> <li>1. <code>ICudaEngine::bindingIsInput()</code></li> <li>2. <code>ICudaEngine::destroy()</code></li> <li>3. <code>ICudaEngine::getBindingBytesPerComponent()</code></li> <li>4. <code>ICudaEngine::getBindingComponentsPerElement()</code></li> <li>5. <code>ICudaEngine::getBindingDataType()</code></li> <li>6. <code>ICudaEngine::getBindingDimensions()</code></li> <li>7. <code>ICudaEngine::getBindingFormat()</code></li> <li>8. <code>ICudaEngine::getBindingFormatDesc()</code></li> <li>9. <code>ICudaEngine::getBindingIndex()</code></li> <li>10. <code>ICudaEngine::getBindingName()</code></li> <li>11. <code>ICudaEngine::getBindingVectorizedDim()</code></li> <li>12. <code>ICudaEngine::getLocation()</code></li> <li>13. <code>ICudaEngine::getMaxBatchSize()</code></li> <li>14. <code>ICudaEngine::getNbBindings()</code></li> <li>15. <code>ICudaEngine::getProfileDimensions()</code></li> <li>16. <code>ICudaEngine::getProfileShapeValues()</code></li> <li>17. <code>ICudaEngine::hasImplicitBatchDimension()</code></li> <li>18. <code>ICudaEngine::isExecutionBinding()</code></li> <li>19. <code>ICudaEngine::isShapeBinding()</code></li> </ul>	<ul style="list-style-type: none"> <li>1. <code>ICudaEngine::getTensorIOMode()</code></li> <li>2. <code>delete ObjectName</code></li> <li>3. <code>ICudaEngine::getTensorBytesPerComponent()</code></li> <li>4. <code>ICudaEngine::getTensorComponentsPerElement()</code></li> <li>5. <code>ICudaEngine::getTensorDataType()</code></li> <li>6. <code>ICudaEngine::getTensorShape()</code></li> <li>7. <code>ICudaEngine::getTensorFormat()</code></li> <li>8. <code>ICudaEngine::getTensorFormatDesc()</code></li> <li>9. <b>Name-based methods</b></li> <li>10. <b>Name-based methods</b></li> <li>11. <code>ICudaEngine::getTensorVectorizedDim()</code></li> <li>12. <code>ITensor::getLocation()</code></li> <li>13. <b>Implicit batch is no longer supported</b></li> <li>14. <code>ICudaEngine::getNbIOTensors()</code></li> <li>15. <code>ICudaEngine::getProfileShape()</code></li> <li>16. <code>ICudaEngine::getShapeValues()</code></li> <li>17. <b>Implicit batch is no longer supported</b></li> <li>18. <b>No name-based equivalent replacement</b></li> <li>19. <code>ICudaEngine::isShapeInferenceIO()</code></li> </ul>

C++ API	Superseded API
<ol style="list-style-type: none"> <li>1. IDeconvolutionLayer::getKernelSize()</li> <li>2. IDeconvolutionLayer::getPadding()</li> <li>3. IDeconvolutionLayer::getStride()</li> <li>4. IDeconvolutionLayer::setKernelSize()</li> <li>5. IDeconvolutionLayer::setPadding()</li> <li>6. IDeconvolutionLayer::setStride()</li> </ol>	<ol style="list-style-type: none"> <li>1. IDeconvolutionLayer::getKernelSizeNd()</li> <li>2. IDeconvolutionLayer::getPaddingNd()</li> <li>3. IDeconvolutionLayer::getStrideNd()</li> <li>4. IDeconvolutionLayer::setKernelSizeNd()</li> <li>5. IDeconvolutionLayer::setPaddingNd()</li> <li>6. IDeconvolutionLayer::setStrideNd()</li> </ol>
<ol style="list-style-type: none"> <li>1. IExecutionContext::destroy()</li> <li>2. IExecutionContext::enqueue()</li> <li>3. IExecutionContext::enqueueV2()</li> <li>4. IExecutionContext::execute()</li> <li>5. IExecutionContext::getBindingDimensions()</li> <li>6. IExecutionContext::getShapeBinding()</li> <li>7. IExecutionContext::getStrides()</li> <li>8. IExecutionContext::setBindingDimensions()</li> <li>9. IExecutionContext::setInputShapeBinding()</li> <li>10. IExecutionContext::setOptimizationProfile()</li> </ol>	<ol style="list-style-type: none"> <li>1. delete ObjectName</li> <li>2. IExecutionContext::enqueueV3()</li> <li>3. IExecutionContext::enqueueV3()</li> <li>4. IExecutionContext::executeV2()</li> <li>5. IExecutionContext::getTensorShape()</li> <li>6. IExecutionContext::getTensorAddress() or getOutputTensorAddress()</li> <li>7. IExecutionContext::getTensorStrides()</li> <li>8. IExecutionContext::setInputShape()</li> <li>9. IExecutionContext::setInputTensorAddress() or setTensorAddress()</li> <li>10. IExecutionContext::setOptimizationProfileAsync()</li> </ol>
IFullyConnectedLayer	IMatrixMultiplyLayer
IGpuAllocator::free()	IGpuAllocator::deallocate()
IHostMemory::destroy()	delete ObjectName
<ol style="list-style-type: none"> <li>1. INetworkDefinition::addConvolution()</li> <li>2. INetworkDefinition::addDeconvolution()</li> <li>3. INetworkDefinition::addFullyConnected()</li> <li>4. INetworkDefinition::addPadding()</li> <li>5. INetworkDefinition::addPooling()</li> <li>6. INetworkDefinition::addRNNv2()</li> <li>7. INetworkDefinition::destroy()</li> <li>8. INetworkDefinition::hasExplicitPrecision()</li> <li>9. INetworkDefinition::hasImplicitBatchDimension()</li> </ol>	<ol style="list-style-type: none"> <li>1. INetworkDefinition::addConvolutionNd()</li> <li>2. INetworkDefinition::addDeconvolutionNd()</li> <li>3. INetworkDefinition::addMatrixMultiply()</li> <li>4. INetworkDefinition::addPaddingNd()</li> <li>5. INetworkDefinition::addPoolingNd()</li> <li>6. INetworkDefinition::addLoop()</li> <li>7. delete ObjectName</li> <li>8. Explicit precision support is removed in 10.0</li> <li>9. Implicit batch support is removed</li> </ol>
IOnnxConfig::destroy()	delete ObjectName
<ol style="list-style-type: none"> <li>1. IPaddingLayer::getPostPadding()</li> </ol>	<ol style="list-style-type: none"> <li>1. IPaddingLayer::getPostPaddingNd()</li> </ol>

C++ API	Superseded API
<ol style="list-style-type: none"> <li>2. <code>IPaddingLayer::getPrePadding()</code></li> <li>3. <code>IPaddingLayer::setPostPadding()</code></li> <li>4. <code>IPaddingLayer::setPrePadding()</code></li> </ol>	<ol style="list-style-type: none"> <li>2. <code>IPaddingLayer::getPrePaddingNd()</code></li> <li>3. <code>IPaddingLayer::setPostPaddingNd()</code></li> <li>4. <code>IPaddingLayer::setPrePaddingNd()</code></li> </ol>
<ol style="list-style-type: none"> <li>1. <code>IPoolingLayer::getPadding()</code></li> <li>2. <code>IPoolingLayer::getStride()</code></li> <li>3. <code>IPoolingLayer::getWindowSize()</code></li> <li>4. <code>IPoolingLayer::setPadding()</code></li> <li>5. <code>IPoolingLayer::setStride()</code></li> <li>6. <code>IPoolingLayer::setWindowSize()</code></li> </ol>	<ol style="list-style-type: none"> <li>1. <code>IPoolingLayer::getPaddingNd()</code></li> <li>2. <code>IPoolingLayer::getStrideNd()</code></li> <li>3. <code>IPoolingLayer::getWindowSizeNd()</code></li> <li>4. <code>IPoolingLayer::setPaddingNd()</code></li> <li>5. <code>IPoolingLayer::setStrideNd()</code></li> <li>6. <code>IPoolingLayer::setWindowSizeNd()</code></li> </ol>
<code>IRefitter::destroy()</code>	<code>delete ObjectName</code>
<ol style="list-style-type: none"> <li>1. <code>IResizeLayer::getAlignCorners()</code></li> <li>2. <code>IResizeLayer::setAlignCorners()</code></li> </ol>	<ol style="list-style-type: none"> <li>1. <code>IResizeLayer::getAlignCornersNd()</code></li> <li>2. <code>IResizeLayer::setAlignCornersNd()</code></li> </ol>
<ol style="list-style-type: none"> <li>1. <code>IRuntime::deserializeCudaEngine(void const* blob, std::size_t size, IPluginFactory* pluginFactory)</code></li> <li>2. <code>IRuntime::destroy()</code></li> </ol>	<ol style="list-style-type: none"> <li>1. Use <code>deserializeCudaEngine</code> with two parameters</li> <li>2. <code>delete ObjectName</code></li> </ol>
<code>IRNNv2Layer</code>	<code>ILoop</code>
<code>kNV_TENSORRT_VERSION_IMPL</code>	<pre>#define NV_TENSORRT_VERSION_INT(major, minor, patch) ((major) *10000L + (minor) *100L + (patch) *1L)</pre> <div style="background-color: #f0f0f0; padding: 5px; margin-top: 10px;">  <b>Note:</b> TensorRT version encoding was changed to accommodate a two digit minor version. </div>
<ol style="list-style-type: none"> <li>1. <code>NetworkDefinitionCreationFlag::kEXPLICIT_BATCH</code></li> <li>2. <code>NetworkDefinitionCreationFlag::kEXPLICIT_PRECISION</code></li> </ol>	Support is removed in 10.0
<ol style="list-style-type: none"> <li>1. <code>NV_TENSORRT_SONAME_MAJOR</code></li> <li>2. <code>NV_TENSORRT_SONAME_MINOR</code></li> <li>3. <code>NV_TENSORRT_SONAME_PATCH</code></li> </ol>	<ol style="list-style-type: none"> <li>1. <code>NV_TENSORRT_MAJOR</code></li> <li>2. <code>NV_TENSORRT_MINOR</code></li> <li>3. <code>NV_TENSORRT_PATCH</code></li> </ol>
<ol style="list-style-type: none"> <li>1. <code>PaddingMode::kCAFFE_ROUND_DOWN</code></li> <li>2. <code>PaddingMode::kCAFFE_ROUND_UP</code></li> </ol>	Caffe is not supported since 9.0

C++ API	Superseded API
<ol style="list-style-type: none"> <li>1. <code>PreviewFeature::kDISABLE_EXTERNAL_TACTICS</code></li> <li>2. <code>PreviewFeature::kFASTER_DYNAMIC_SHAPES</code></li> </ol>	<ol style="list-style-type: none"> <li>1. External tactics are always disabled for core code</li> <li>2. This flag is on by default</li> </ol>
<ol style="list-style-type: none"> <li>1. <code>ProfilingVerbosity::kDEFAULT</code></li> <li>2. <code>ProfilingVerbosity::kVERBOSE</code></li> </ol>	<ol style="list-style-type: none"> <li>1. <code>ProfilingVerbosity::kLAYER_NAMES_ONLY</code></li> <li>2. <code>ProfilingVerbosity::kDETAILED</code></li> </ol>
<code>ResizeMode</code>	Use <code>InterpolationMode</code> , alias is removed
<ol style="list-style-type: none"> <li>1. <code>RNNDirection</code></li> <li>2. <code>RNNGateType</code></li> <li>3. <code>RNNInputMode</code></li> <li>4. <code>RNNOperation</code></li> </ol>	RNN related data structures are removed
<code>SampleMode::kDEFAULT</code>	<code>SampleMode::kSTRICT_BOUNDS</code>
<code>SliceMode</code>	Use <code>SampleMode</code> , alias is removed

## 2.5. Removed C++ Plugins

Table 7. Removed C++ Plugins and their Suggested Superseded Plugin

C++ Plugin	Superseded Plugin
1. <code>createAnchorGeneratorPlugin()</code>	1. <code>GridAnchorPluginCreator::createPlugin()</code>
2. <code>createBatchedNMSPlugin()</code>	2. <code>BatchedNMSPluginCreator::createPlugin()</code>
3. <code>createInstanceNormalizationPlugin()</code>	3. <code>InstanceNormalizationPluginCreator::createPlugin()</code>
4. <code>createNMSPlugin()</code>	4. <code>NMSPluginCreator::createPlugin()</code>
5. <code>createNormalizePlugin()</code>	5. <code>NormalizePluginCreator::createPlugin()</code>
6. <code>createPriorBoxPlugin()</code>	6. <code>PriorBoxPluginCreator::createPlugin()</code>
7. <code>createRegionPlugin()</code>	7. <code>RegionPluginCreator::createPlugin()</code>
8. <code>createReorgPlugin()</code>	8. <code>ReorgPluginCreator::createPlugin()</code>
9. <code>createRPNROIPlugin()</code>	9. <code>RPROIPluginCreator::createPlugin()</code>
10. <code>createSplitPlugin()</code>	10. <code>INetworkDefinition::addSlice()</code>
<code>struct Quadruple</code>	Related plugins are removed



## 2.6. Removed Safety C++ APIs

Table 8. Removed Safety C++ APIs and their Suggested Superseded Safety API

Safety C++ API	Superseded Safety API
1. <code>safe::ICudaEngine::bindingIsInput()</code>	1. <code>safe::ICudaEngine::tensorIOMode()</code>
2. <code>safe::ICudaEngine::getBindingBytesPerComponent()</code>	2. <code>safe::ICudaEngine::getTensorBytesPerComponent()</code>
3. <code>safe::ICudaEngine::getBindingComponentsPerElement()</code>	3. <code>safe::ICudaEngine::getTensorComponentsPerElement()</code>
4. <code>safe::ICudaEngine::getBindingDataType()</code>	4. <code>safe::ICudaEngine::getTensorDataType()</code>
5. <code>safe::ICudaEngine::getBindingDimensions()</code>	5. <code>safe::ICudaEngine::getTensorShape()</code>
6. <code>safe::ICudaEngine::getBindingIndex()</code>	6. <code>safe::name-based methods</code>
7. <code>safe::ICudaEngine::getBindingName()</code>	7. <code>safe::name-based methods</code>
8. <code>safe::ICudaEngine::getBindingVectorizedDim()</code>	8. <code>safe::ICudaEngine::getTensorVectorizedDim()</code>
9. <code>safe::ICudaEngine::getNbBindings()</code>	9. <code>safe::ICudaEngine::getNbIOTensors()</code>
10. <code>safe::ICudaEngine::getTensorFormat()</code>	10. <code>safe::ICudaEngine::getBindingFormat()</code>
1. <code>safe::IExecutionContext::enqueueV2()</code>	1. <code>safe::IExecutionContext::enqueueV3()</code>
2. <code>safe::IExecutionContext::getStrides()</code>	2. <code>safe::IExecutionContext::getTensorStrides()</code>

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# Chapter 3. trtexec

## 3.1. trtexec Flag Changes

Table 9. Changes to flag workspace and minTiming

TensorRT 8.x	TensorRT 10.0
<pre>trtexec \   --onnx=/path/to/model.onnx \   --saveEngine=/path/to/engine.trt \   --optShapes=input:\$INPUT_SHAPE \   --avgTiming=1 \   --workspace=1024 \   --minTiming=1</pre>	<pre>trtexec \   --onnx=/path/to/model.onnx \   --saveEngine=/path/to/engine.trt \   --optShapes=input:\$INPUT_SHAPE \   --avgTiming=1 \   --memPoolSize=workspace:1024</pre>

## 3.2. Removed trtexec Flags

Table 10. Removed trtexec Flags and their Suggested Superseded Flag

trtexec Flag	Superseded Flag
<code>--minTiming</code>	<code>avgTiming</code>
<code>--preview=features options:</code> <ul style="list-style-type: none"><li>▶ <code>disableExternalTacticSourcesForCore0805</code></li><li>▶ <code>fasterDynamicShapes0805</code></li></ul>	N/A
<code>--workspace=N</code>	<code>--memPoolSize=poolspec</code>

## 3.3. Deprecated trtexec Flags

Table 11. Deprecated trtexec Flags

<b>trtexec Flag</b>
<code>--buildOnly</code>
<code>--explicitPrecision</code>
<code>--heuristic</code>
<code>--nvtxMode</code>

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